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# Medical Times

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## General Scientific

### THE TREATMENT OF SYPHILIS.


FAXTON E. GARDNER, M.D.

New York.


For the past six years the treatment of syphilis has been constantly undergoing important changes. Old, time-honored, ideas have been completely discarded; newer conceptions, which at first seemed to authorize full confidence and approval, have also gone to the therapeutic scrap heap. We have had to reverse our positions, not once, but many times, so that, despite the enormous amount of work done, the treatment of syphilis cannot be presented now as something settled and definite. Indeed one might even be tempted to say that there is more uncertainty in our minds now than there was twelve or fifteen years ago. But this is no sign that we have been going back; on the contrary we have replaced the blind assurance of long empiricism by the hesitancy of scientific research tackling a problem the magnitude of which heretofore had been unappreciated.

Much progress has been made, so much that, in a measure, we are justified in talking about a present day treatment of syphilis, in contradistinction with the older methods; with this capital reservation, however, that a great part of this treatment is but provisional in character. It seems most likely that in twenty years the methods of to-day will look as inadequate and obsolete as those of twenty years ago now appear to us, and that many of the problems that are now perplexing us will have been solved in quite a simple fashion.

All the progress that has been made is due to *a more direct administration of more powerful drugs having a more direct action on the spirochetes* and guided by a *better understanding of the pathology* of the disease.

Those newer remedies having a high spiricillide power are all organic compounds containing in their molecule the phenylarsenic group: atoxyl, arsacetin, arsenophenylglycin, salvarsan, neosalvarsan, galyl, ludyl. Of these salvarsan and neosalvarsan are the best known and most widely used. They (and also probably galyl) are exceedingly valuable drugs. They represent the first really successful step in the chemotherapy of syphilis. They are possessed of a direct action on spirochetes which they kill by union with their protoplasm. In this respect they considerably differ from mercury which has only an indirect action, and from potassium iodide which has none at all on spirochetes. However, despite this inferiority in direct power, mercury and iodides retain, as necessary adjuvants, all the therapeutic value they ever had in the treatment of syphilis.

As regards the more direct administration of the drugs at our disposal, we certainly have gone far in this direction, but probably not yet far enough. The first step was to replace the very uncertain channels of gastro-intestinal and transcutaneous absorption by intramuscular injections. The latter was also the first mode used for salvarsan. It was painful, absorption was uncertain, so the procedure was found to be not direct enough; and injection in the circulation by way of the veins was next adopted. As, with a correct technique, intravenous infusions are altogether painless, and they have the immense advantage of allowing us to figure exactly how much of the drug goes through the body in a given time; and as, on the other hand, they do not entail any special risks, we have little reason to wonder that they were adjudged the best method and believed to meet all the requirements, until pathology showed that sometimes this seemingly perfectly straight path to the tissues was in fact too roundabout to reach the lesions we wanted to cure. Until the pathological explanation was forthcoming, it was puzzling to see the intravenous treatment, which is almost always sufficient in recent cases, fail miserably in later stages of the disease.

It fails because after the secondary period, syphilis is no longer a general, but a distinctly *focal*, disease. The work of Warthin demonstrating with notable frequency the persistence of spirochetes in the aortic walls, pancreas, adrenals, testicles, intestinal walls of latent syphilitics many years after infection is very illuminating in this respect. It may happen that the spirochetal focus is not within reach of drugs thrown into the circulatory stream; such is the case with the cerebro-spinal fluid. To sterilize the latter we have been led to try intraspinal treatment, that is, direct injection into the said cerebro-spinal fluid of serum containing salvarsan or mercury. Of late the lumbar injection has been supplemented by injection of serum similarly treated into the lateral ventricles of the brain after trephining,

and results are said to be quite encouraging. Intraspinal treatment, the first attempt at a focal treatment of syphilis, has warm partisans and skeptical adversaries. No doubt it often remains fruitless. I believe the failure is due to two reasons; first, in the cases in which intraspinal treatment is used, disinfection of the cerebro-spinal fluid is not the only, or even the most important, goal to attain in order to effect a cure; secondly, because the doses of salvarsan introduced within the meninges is much too small to be really effective.

In the other cases, when the spirochetal focus is accessible through the circulatory channels, and ought to be cured by substances introduced therein, failure is ascribable to the fact that almost all of the drug injected is wasted, and only a small portion reaches the spot it is desired to reach. The only salvarsan that can be of any effect against a spirochetal focus is, after an intravenous injection, that part, which diluted in the whole mass of the blood, goes to the artery supplying the organ harboring said focus. All the rest simply circulates in the blood until it is taken up and thrown off by the kidneys. The sole good effect that may result from that salvarsan, wasted in so far as spirillicide power goes, is the general tonic influence of arsenic. Thus we easily understand why in old latent syphilitics with a positive Wassermann the general condition is much improved by salvarsan treatment, but the blood reaction is not modified; the luetic "thorn" remains untouched. The same explanation holds good for the inefficacy of salvarsan therapy in the formerly so-called parasyphilitic conditions, which now have been shown to be caused by spirochetes. If salvarsan is of no avail in aneurysm of the aorta and paresis, it is not because it has suddenly lost its power against spirochetes; it is not either because the latter have become arseno-resistant. It is because our so far most direct methods have not been direct enough to bring enough salvarsan to the spirochetes.

A very interesting attempt has been made recently by Sinclair to overcome this difficulty. In a case of confirmed paresis, he injected neosalvarsan in concentrated solution directly into the internal carotid artery, after exposure of the latter at the bifurcation; first 0.6 Gm., then 0.9 Gm. three weeks later, and he expects to renew the procedure as often as needed and practicable. It was not followed by any untoward consequences, and the mental condition of the patient cleared up wonderfully. It goes without saying that it would be preposterous to claim at this early date that we have in this method a cure for paresis; but, aside from its clinical interest, this case has the value of an experiment which may go far toward solving a few moot questions pertaining to the treatment of lues. First, it shows that the brain tissue can stand without damage an amount of salvarsan as enormous compared with the quantity circulating in the blood after an intravenous infusion, and that, therefore, the alleged affinity of salvarsan for nervous tissue (so-called neurotropism) does not exist in reality. Secondly, if it should be proved that such a salvarsan "flood" actually destroys spirochetes lodged in the cerebral tissue, it will go a long way toward proving that time of contact is a factor of little importance in the spirillicide action of salvarsan (since as soon as the salvarsan has passed from the arteries into the capillaries and thence into the venous radicles the situation is exactly that obtaining after an intravenous injection which has absolutely no action in paresis), and remove the last shadow of a doubt about the action of salvarsan being direct. It would mean that any spirochete that meets a particle of salvarsan is destroyed on the spot, and that the only problem of syphilotherapy is to get the salvarsan in contact with the spirochetes. Finally, it opens up a seemingly very promising field for the focal treatment of focal syphilis. If we were able to ascertain—and there is no valid reason to suppose that pathology will not be able to do it eventually—where the focus is located in a given case, it would certainly be most rational to send salvarsan to the affected organ through the nutrient artery, if accessible, and to slow up, if possible, the return circulation.

Thus we see our technique steadily aiming at more directness; so that we may accept as summing up this tendency the formula given by Thompson: The day of pills and drops is past in the treatment of syphilis, the needle has taken their place, even if it is not mathematically true. We still prescribe potassium iodide in drops and will have to continue to do so indefinitely; but we know that iodides are only very useful adjuvants, and no longer the main prop of antisyphilitic therapy. We still have opportunities to use inunctions or protiodide pills or bichloride tablets; but we no longer have recourse to those by choice, and only when we cannot do otherwise, as, for instance, when a patient has to travel.

Great as is the intrinsic value of the drugs at our command, it would not suffice for a successful treatment of syphilis, it might even prove a dangerous double-edged weapon, if we did not have to guide us a better understanding of the pathology of the disease. Pathology alone can supply a sound and rational basis for scientific therapeutic endeavor. Fortunately we have learnt more about this subject in the twelve years that have elapsed since the discovery of the causal organism than our forefathers had in centuries of painstaking, but of necessity groping, clinical observation.

Pathology has emphasized, above all, the importance of *early diagnosis and immediate therapeutic action.* Indeed, the fate of a patient depends on how early he comes to us and how vigorously we are going to treat him during the first year of his infection. Invasion of the tissues goes on without interruption from the moment the spirochete is deposited on the broken epidermis, and is complete almost before any outward sign becomes apparent; as evidenced by the recovery of the spirochete from the testicle, the bone marrow, even from the cerebro-spinal fluid, at a time when nothing more than a small chancre had developed. But the number of spirochetes is comparatively small at that early period, and their hold on the tissues is frail, so that treatment instituted then has a much better chance of being curative and even abortive. Our duty is, therefore, plain. No delay is excusable in settling the question of diagnosis, by demonstrating the spirochetes, either by the dark field illuminator or the India ink stain. Once the diagnosis is made, no delay is excusable in starting treatment. I would even say that when the clinical evidence is strongly suggestive of syphilitic chancre and adenitis, and we are not fortunate enough to clinch our diagnosis by finding spirochetes (and failure is always possible even in the most experienced hands) I should advise beginning treatment without delay. In my experience a sore which is suspicious almost invariably turns out to be syphilitic, and I deem it safer to seek an early and abortive treatment than to take a risk on the very slim chance of the non-existence of syphilis.

Pathology also has taught us that the more powerful the drug the more dangerous it may become if we do not use as it must be used in order to secure the maximum of efficiency. *No trifling* is a capital principle of

syphilotherapy, especially with the newer arsenical preparations. The reason is found in the great role played in lues by sensitization. In a previous article (see MEDICAL TIMES, May 1916) we have tried to show what an important bearing it has on treatment. Sensitization is produced experimentally by repeated injections of dead cultures of spirochetes and, in the living subject, results from the freeing of toxins which attends the destruction of a large number of these organisms within the body. Consequently any therapeutic procedure which only brings about a partial sterilization of the body renders the tissues more vulnerable to the grip of the surviving spirochetes. This is precisely what one salvarsan injection does; hence it always causes a certain degree of sensitization, especially during the early secondary period, when spirochetes are numerous, and body tissues have not yet had time to become more or less immune to the action of toxins. If we are to destroy spirochetes within the body during the secondary period we must either strike hard enough not to leave any of them to take advantage of the sensitization called forth by the products of disintegration of the others, or strike gently and progressively enough not to produce marked sensitization. In other words, if we select intensive treatment, we must make it such that the fractional sterilization of each salvarsan injection is repeated sufficiently frequently to obtain a total sterilization before the survivors have had time to find a safe harbor in sensitized tissues. This absolutely condemns insufficient and irregular treatment with which we run the risk of getting more sensitization than useful effect.

Incidentally I wish to state that I cannot approve the practice which seems to have become established in some quarters, namely, to administer salvarsan only when, and as long as, the patient exhibits contagious lesions, and constitutes a public danger. It undoubtedly is desirable for the community to have such an individual "bleached," and thus a source of dissemination promptly made harmless; but this kind of treatment is not for the welfare of the patient himself.

Our treatment, therefore, must be steady; but we still have to decide whether we want to make it mild and protracted, or intensive and shorter. Experience favors the latter mode. To borrow a comparison from military strategy, we might liken the intensive and shorter course to a "drive," that is, a movement made with a vast concentration of troops and ammunition, and pressed until the enemy line is broken through. Mild treatment stretching over a long period of time would be "trench warfare," in which one and the other side alternately gains some advantage, without the general position being materially affected, except perhaps after a long time and a continued series of local successes. In the same vein irregular treatment might be compared to unsupported isolated attacks which only lead to waste of men and munitions without any appreciable final results. Of course, a "drive," to be successful, requires an adequate supply of ammunition, and soldiers which are able to stand the strain; in syphilis therapy, the drugs are our ammunition, the soldiers are the body tissues, particularly the heart, blood vessels, liver and kidneys of the patient.

In salvarsan work we started from the idea that one single dose would be sufficient, but we soon found out that repetition of doses was essential in all cases. Moreover, little by little, it became evident that not only must we give enough of the drug, but we also must administer it within a certain lapse of time. We may meet this requisite by employing either small doses at short intervals or high doses at longer intervals. Which of the two is the better procedure is one of the moot questions that only a long experience will solve. Logical arguments may be brought forward in favor of either.

Partisans of smaller amounts dwell on the fact that, after injection of a large dose, the excretory organs at once begin to throw off the quantity of drug in excess of a certain concentration in the blood, and the higher the dose the quicker this initial elimination. Therefore, the strong blood concentration, with great spirillicide power, the chief advantage claimed for high doses, lasts only for a short time and is rapidly lowered until, a few hours after injection, the amount retained in the blood is the same as it would be after a smaller dose which does not induce such a massive excretion. And the question is asked whether it is really worth while to impose such a heavy extra work on the viscera, and to incur the unavoidable additional risk, for the sake of just a few hours of high blood concentration. The question is not fully answerable yet; but maybe those few hours are sufficient to do the work, and the query might be countered by another one fully as pertinent, namely, would not a high concentration do in a few hours what a lesser concentration would not be able to do, even in a much longer time? It is not unlikely that high blood concentration is an essential condition for effective salvarsan work. We already have raised this point, and await with much impatience confirmation or infirmation of Sinclair's "flood" in paresis.

But the best solution of the problem would be found if, instead of opposing the two methods, we should combine features of both, taking from one the high doses and from the other the short interval. I have used salvarsan both in large and small doses and I must admit that I have not had more untoward reactions with the former than with the latter. On the other hand it is undeniable that salvarsan can safely be given at much shorter intervals than customary. Scholz, of Breslau, gives it 3 times in 24 hours; Pollitzer injects three times on three succeeding days, and claims to have thus obtained results in cases that had proved refractory to a less "bunched" method of administration. His reason for so doing is the fear of the development of arsenoresistant strains if prompt sterilization is not effected. We think that sensitization is as good an explanation as arsenoresistance for the necessity of striking hard; but, whatever the explanation, the practical fact remains that shortening the interval is very important, and often leads to the desired result. So that we may accept as the most stringent formula of intensive treatment the following: To give the largest possible amount of salvarsan in the shortest possible time. Of course the bodily condition of the patient must always be taken in prime consideration. This is an absolutely essential condition if we are to avoid disaster. Whatever the principles we may choose, however sound in theory may be our reasonings, they do not release us from the dictates of common sense. Let us never forget that, after all, the treatment of syphilis is *not* a simple equation of chemotherapy. Much as we can learn from the test tube we cannot reduce the human body to strict test tube terms, and he is a wise clinician who does not permit himself to be carried too far by his pet theories to the detriment of his patient.

From what has been said, we conclude that salvarsan is a powerful agent for the *fractional* sterilization of syphilis; that it must be used strenuously while being used, and, therefore, can be employed only intermittently. The necessity for a "follow up" treatment thus becomes evident. Mercury is admirably adapted for this purpose. It does not act directly on spirochetes,

as does salvarsan, and the chances of developing a mercury resistant strain are smaller. For this reason mercury is particularly valuable for the protracted administration of small doses. It is just as essential to-day as it ever was. Gottheil has tersely summed up our belief on this point: With mercury alone, we apparently could cure syphilis; with mercury plus salvarsan, we can do it better; we cannot do it with salvarsan alone.

Mercurial treatment ought to be begun as soon as the arsenical course is ended. Some authors even advise giving mercury between salvarsan injections. This is possible only when the latter are repeated at infrequent intervals, a method which, as already stated time and time again, we do not believe satisfactory. During an intensive course of salvarsan there is neither time nor need to slip in a few mercury injections.

*Directness of action* pushed to the limit, ***intermittent use of salvarsan in as high doses and at as short intervals as the organs of the patient will allow, immediate and prolonged follow up treatment with mercury*** are the basic principles of the therapy of lues.

(*To be continued.*)

## THE IMPORTANCE OF A SPECIFIED DIET IN GENERAL PRACTICE.*

WILLIAM A. MOWRY, M. D.,
French Lick Springs, Ind.

"For the sake of health, medicines are taken by weight and measure; so ought food to be, or by some similar rule."

This quotation from Skeleton furnished the thought for my topic.

In prescribing a rational dietary for either the sick or the well, some knowledge is requisite of the laws of nutrition and of dietetics, as well as of the fuel value of food. The processes of the digestion and absorption of foods, their transformation after absorption and their subsequent oxidation liberating energy within the body are the fundimentals of nutrition. Dietetics is the science of the selection, preparation and serving of foods. Selection must be made with due care to supply a diet sufficient and efficient for bodily needs, as far as possible according to individual tastes and idiosyncrasies. In all cases the preparation and serving of the food selected are most important considerations.

Without a requisite knowledge of the fuel values of food, it is imposible to select a proper diet. Experimentation has shown that a very definite amount of energy is developed in the body by the oxidation of a certain amount of food, and since it has also been proven just how much energy is necessary to meet the bodily needs, all diets should be arranged so that their fuel values will be suited to the patient's requirements.

It is not my purpose to discuss in detail the uses of the various foodstuffs, or the protein, fat and carbohydrate ratios. Such information is readily available in the many standard works on nutrition and dietetics. The modern medical school teaches these and much more in physiological chemistry, and the beginning practitioner has a theoretical knowledge at least of the subject.

However, his working ideas of diet and dietetics are most vague unless he has been fortunate enough to serve an interneship in one of the large and well equipped hospitals, where the food is served under the direction of a trained dietitian. And it is only comparatively recently that any particular attention has been paid to the balancing of diets in the wards of even such hospitals, except in special cases where the nature of the disease demanded the regulation of the type and quantity of food.

A six years' residence at French Lick where one sees a very large number of abnormal or diseased conditions, in the relief or cure of which diet plays a most important part, has impressed upon me the neglect or indifference of the average general practitioner in advising his patients regarding their dietary. Frequently for this or that condition, the patient is simply told to eat less meat, or less rich food, or less starches and sugars with no regard whatsoever as to the exact amount to be taken. Printed diet lists permitting certain foods and prohibiting others, are often given patients with no instructions regarding how much, and how often he is to partake of the various articles permissible. Seldom is a specific menu given for each meal with details for varying or modifying the diet as occasion demands. It may be admitted that it is somewhat easier to control a dietary at a "cure" than at home. People away from their usual duties are more amenable to a given regimen, partircularly when a goodly number of others are following a similar course of treatment. The great majority of such patients, I believe, would carefully observe a diet at home if they were given more explicit instructions. These should include—besides the kind and amount of food—directions for preparing it. American cooking is notoriously bad, particularly in the matter of vegetables and meat. Fried foods in profusion are served on almost every table and no doubt contribute largely to the prevalance of hyperacid gastric conditions.

However, to give detailed instructions regarding a dietary one must take into account, not only the disease, general nutrition, the blood pressure, heart and kidney findings, but also the mode of life, the activity of the patient, as well as his likes, dislikes and idiosyncrasies. In health we know that the business or professional man, unless he takes a great deal of exercise, does not need the same amount and kind of food as does the farmer or day laborer. Certainly the usual activities of the former class require less carbohydrate to produce energy and less protein for repair than those of the latter, yet the average town or city man eats proportionately far greater amounts of both classes of foodstuffs than the outdoor worker.

The energy requirements of ordinary individuals in health reduced to calories per kilogram of weight have been worked out by any number of observers, and are perhaps as well summarized by Van Noorden as anyone. In general a man at complete rest requires on the average one calorie per kilogram per hour, and the requirements advance up to two or two and one-half calories per kilogram per hour for the individual at hard work. Using these figures as a basis, it is a very easy matter to quite accurately estimate the total number of calories per day for any individual. This includes all classes of foodstuffs, and one must determine the proportion of proteids, carbohydrates and fats. According to Voit's standard diet for a man at moderately hard work, the protein furnishes approximately 16% of the energy, the carbohydrates 66% and the fats 18%. As stated before, all works on dietetics give complete tables showing the number of calories in each gram of the various foodstuffs, as well as the percentages of protein, carbohydrates and fat in practically every article of diet With such data one can readily make out a suitable dietary for any individual, telling him in plain English just what he may have and how much of it. In ordinary health the variations of diet are so numerous that the average person is usually able to satisfy his appetite with proper food.

* Read at the Third District Medical Association, October 26, 1916.

But it is in the treatment of those abnormal or diseased conditions in which the kind and amount of food plays so important a part, that the careful prescribing of diet is absolutely necessary. Frequently the dietary is the direct etiology of disease, as in many cases of hypertension and some forms of diabetes. It is quite generally believed that an excess of protein food is a factor in raising the blood pressure, particularly in the early stages, and the majority of patients suffering from this condition are, or have been, heavy eaters of meat, fish and eggs, and usually bread and cereals. The latter two articles are classed as carbohydrate foods, but contain a considerable percentage of protein.

Of all conditions in which I prescribe a specified individual diet, the most striking results have been shown in cases of hypertension. Dr. H. M. Soper in the *Interstate Medical Journal* gives his experience with seventy patients who were relieved of their symptoms and had an average fall of forty points in blood pressure by means of diet alone. The keynote of his treatment is the quantity of protein taken. The meat, eggs, fish, bread, cereals and cream are weighed and practically all the patients are restricted to 450 grains meat with a total amount of 900 grains protein daily—a few received more. Of course, condiments were cut out and salt restricted.

I have a series of some three to four hundred cases of hypertension in which there has been an average fall of forty-four points in the pressure. Of course, elimination by mineral waters and baths has been a factor in all these reductions, but certainly the diet has played the chief role. Many patients from my series are seen by me every six months, and most of them are under observation by the home physician. The great majority of them have been able to keep the pressure down if they steadily adhere to their diet. Frequently I find that the high pressure has returned when they begin the cure again, but usually it can be reduced.

To all these patients I endeavor to explain carefully what foods contain the proteids. It is astonishing to learn how many people consider that they may eat all the fish and fowl they wish as long as beef, mutton and pork are not eaten. The "red meat" fallacy has a marvelous hold upon their imaginations. In practically all cases I write out a menu for each of the three meals, specifying the amount of meat or eggs or fish potatoes, cereal and the number and thickness of slices of bread, and of what kind. In diets for hypertension considerable fruits and green vegetables may be eaten provided there is no condition present which necessitates their restriction. A short resume of the history and results of the treatment in two of these cases selected at random may be of interest.

**Case 1.** Lawyer—male—age 45—blood pressure systolic 160—diastolic 108—large amount of indican and a few hyaline casts in the urine. This patient rarely used alcohol, smoked moderately and in all respects considered himself a temperate man. However, he ate a goodly portion of meat—twice daily at least—and always eggs for breakfast, and except for a short period in the summer took very little exercise. Previously the patient had been advised to eat "less meat"—therefore, he omitted his usual breakfast bacon.

He was given a moderate portion of meat, or fish, or two eggs once daily, six slices of bread or toast and one baked potato; also fruit twice daily, green vegetables and simple custard desserts. In thirteen days the blood pressure was reduced to 120 systolic and 78 diastolic. The first two days he was moderately purged and had a sweat bath on alternate days. One year from the time I first saw him he was following the same diet and his pressure was 120 systolic and 80 diastolic, with no urinary findings whatsoever.

**Case 2.** Banker—male—age 60—no exercise—blood pressure 274 systolic, diastolic 190—traces of albumin and sugar and many hyaline casts and a few granular ones in the urine. For twenty-five years has had sugar varying from faint traces to 1½%. For years he had eaten no sweets nor starches, but excessive quantities of proteids. Patient was very nervous.

He was absolutely forbidden to eat meat or eggs or fish or soups containing meat stock, permitted five or six slices of bread daily, one baked potato and large amounts of green vegetables and cooked unsweetened fruits. In three weeks his blood pressure had dropped to 180 systolic and 110 diastolic, and his sugar and albumin had disappeared. I have seen this patient at six months intervals for a period of two years, and he now has a pressure of 158 sytolic and 96 diastolic with varying traces of sugar, no albumin and but a few hyaline casts. He is allowed meat or fish or eggs usually once daily, and his carbohydrates are varied according to his sugar. His home physician takes much interest in carefully watching his diet and it is accurately prescribed at frequent intervals.

The average patient suffering from diabetes usually is not explicitly instructed as to the amounts of food to be taken. Often he is told to use gluten instead of wheat flour with no limit as to quantity. A man consulted me a year ago with 9 2-3% of sugar. He was 52 years old and had lost about ten pounds in the preceding year—other findings were negative. I questioned him concerning his diet and was informed he ate meat and eggs at each meal; also four or five slices of gluten bread at each meal, with pie, pan cakes or muffins all made from gluten flour at least once daily. His home physician—a very able practitioner—had told him to substitute gluten for wheat flour, neglecting to mention quantity. Under carefully regulated treatment the patient's urine quickly became sugar free, and six months ago he had a daily tolerance for two slices of wheat bread at a meal, one potato and two dishes of cooked unsweetened fruit, and he had gained about five pounds. His case well illustrates the necessity of the accurate specifications of diet.

Many of us see patients who are much over-weight, and we all know that the diet must be restricted in order to lose. Do not tell such a patient to eat a third less of everything, but find out what he eats and how much—take his blood pressure and examine his urine, and give him a balanced diet suitable for his condition, but of about a thousand calories less than his weight calls for. Advise moderate exercise never to the point of exhaustion. You may be certain that the patient will lose weight—usually gradually—and he will stick to the diet if he is getting the result. The depression and nervousness inevitable during the first few weeks of an obesity diet are greatly lessened by the carefully balancing of the ration.

In the acute or chronic gastrointestinal conditions, the accurate prescribing of diet is selfevident. Often many different types and quantities of food have to be tried before one can be found which will give relief from symptoms and furnish the proper nourishment. Of course, many of these cases suffer from some abdominal lesion as ulcer, chronic appendicitis or gall bladder disease. Surgery is the only cure in such conditions, but frequently dietary measures alleviate the pain or distress to a marked degree. Seldom does the physician neglect to regulate the diet in acute conditions of any kind. The necessity for so doing is recognized by all. It is in chronic disease, or for the healthy individual who is eating an improperly balanced meal that too often few or no instructions regarding the dietary are given, and it is for these that I make the earnest plea to tell the patient just what and how much to eat.

French Lick Springs Hotel.

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An important step in the treatment of diabetes is to arrange the diet in such a way that the patient is kept in nitrogenous equilibrium.

# IS THERE ERROR AT TIMES IN USING AUTO CONDENSATION IN THE TREATMENT OF HIGH BLOOD PRESSURES?

HARLEY STAMP, M.D.,
HARVEY LABORATORY FOR RESEARCH IN BLOOD PRESSURE, UNIVERSITY OF PENNSYLVANIA.
Philadelphia.

At times the results obtained clinically are apt to mislead unless we look at them from all different angles possible. This is the case in blood pressure readings particularly, because while the work done by different individuals is on the whole extensive, it has not been carried out according to any uniform system. Both group work as well as individual work should be accurate, detailed and thoroughly charted. Until comparatively recent months, accounts of work in blood pressure have been too prone to accept the surface interpretations and not to delve beneath the surface.

Earlier literature was, it is true, extremely limited, but little by little additions have been made until now our knowledge has increased to such a degree that our former conclusions may stand minor revisions, perhaps with marked advantage to all.

There appeared an article in December, 1916, MEDICAL TIMES, p. 370, in which a writer states that certain high blood pressures were permanently lowered by auto condensation. Our experience leads us to believe that the conclusions drawn are in some of the cases quoted open to question. The pulse rate observations do not seem to us to be at all conclusive as the difference in pulse rate would be accounted for by the fact that the average patient, after reclining on a couch for 20 minutes, has a lowered pulse rate.

Apparently the only safe way would have been to have taken the pulse rate before and after the observed has reclined on a couch for 20 minutes, and then to have made the same observations before and after the application of the auto condensation.

Why not allow the patient under observation to rest previously on the couch the same length of time as during the treatment under auto condensation and make blood pressure readings before and after? In other words, take blood pressure observation before reclining and after having reclined 20 minutes. After the patient walks about until the blood pressure is the same as the first reading, then apply the auto condensation for 20 minutes and endeavor to draw a conclusion from this data.

In the accompanying chart we can see the effect of rest for 20 minutes. These records were made to parallel as much as possible the records given by the American Association of Clinical Research.

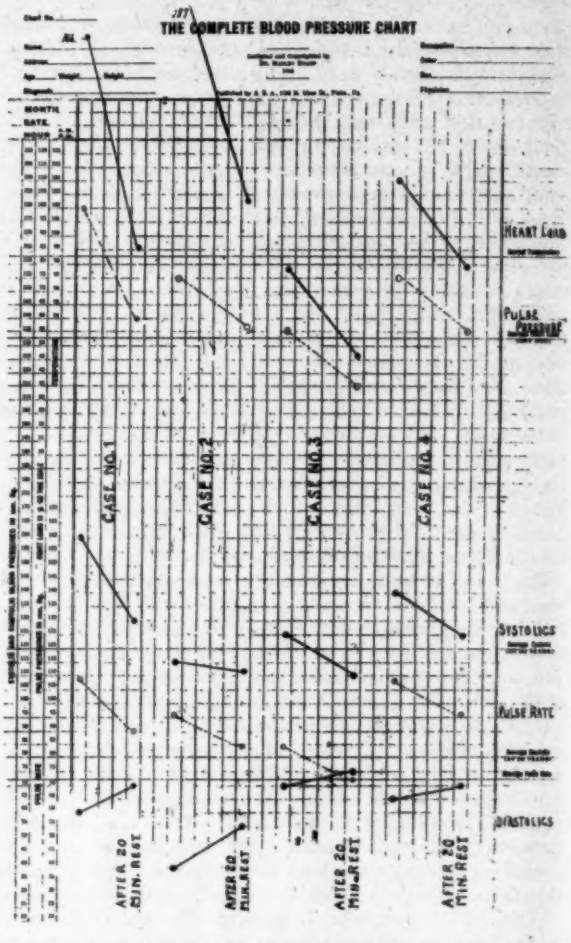
From our observations with auto condensation we are inclined to believe that the results would not be so conclusive as one is led to believe in the article published in the December MEDICAL TIMES.

In making a study of the individual cases as given in this article, let us go over each one separately. As the heart load[1] is the true index, we must pass Case I and a part of the readings in Case II, Case III, Case IV, Case VI, and Case VIII. A brief resume of heart load is here given.[2]

The principal factors involved in blood pressures of given individuals are:

1. Heart's energy.
2. Peripheral resistance

[1] See author's "An Effort to Establish a Standard Heart Load."
[2] "An Effort to Standardize Myocardial Capacity," *Medical World*, February, 1917.




Four cases are here shown (see Chart No. 1) giving the results of twenty minutes' rest on a couch.

Case No. 1 on Chart 1. Male athlete, 22 years, 195 lbs., had smoked 15 cigarettes on day record was made.

Case No. 2 on Chart 1. Male 35, 140 lbs., (post diphtheretic).

Case No. 3 on Chart 1. Female 40, 145 lbs. (arterio sclerosis).

Case No. 4 on Chart 1. Female 46, 160 lbs. (paroxysmal tachycardia).

1. Peri-axial — Velocity
2. Peri-luminal — Pressure
3. Mural — Side Pressure.

3. Volume of circulating MEDIUM.
   Use of word MEDIUM instead of blood, as for example: saline injections after great loss of blood.
4. Elasticity of arterial, capillary and venous walls or vaso-motor tone (Veno-motor).
5. Viscosity of the circulating medium.
6. Internal Glandular Secretions.

In addition there are the following factors usually considered of secondary importance:

Mental Effort.
Emotional (not used as mental effort).
Muscular influence.
Pulse rate (questionable, but a slight factor).
Diurnal.
Accommodation.
Arterial wall curve.
Position of observed—
Sitting—Standing—Reclining.

Diet—
Material.
Recency.
Sex—Age—Humidity—Elevation—Breathing.
Vaso-motor neurosis.
Myocardial condition.

An important feature of sphygmomanometry is the ability to measure the functional capacity of the myocardium. Certain conclusions, the results of thousands of observations, seem to point toward a satisfactory solution. The literature of the subject has been inclined constantly to set arbitrarily a figure above or below which systolics or diastolics should not go.

This seems a faulty hypothesis, when we recognize the laws of physiological variability. Age has been the one exception to the fixed rule. Perfectly normal individuals vary considerably in either systolic or diastolic determinations and the idea of fixing some definite relation has been the means of inducing many investigators to give the subject serious consideration.

It has been said that the normal is very rare and at times does not exist, except in theory. The average is by definition always obtainable, but the terms "normal" and "average" are not synonymous.

Then again it is to be remembered that excepting life insurance and fraternal organization work, the physician is rarely called upon to make an examination of a normal, healthy individual. Now what is normal for one person may not even approximately approach the normal in another.

The thousands of observations made in this series were made by the auscultatory method. The pulsations in the brachial artery were obliterated by inflation of the cuff and the air being released gradually and quickly, but under absolute control, the pressure was diminished regularly. The stethoscope was placed at or near the bifurcation and the various phases of recorded as the sounds were produced.

In this work the end of the fourth phase is the point of diastolic determination; the beginning of the first sound the point of systolic determination. The observer must make a careful distinction between the onset of the first phase and the pre-systolic sounds.

The observations were made at many different places. Some were made at sea level, others were made at elevations of over 10,000 feet*; some were made during periods of great humidity and others in dry climate.

The series of observations extended from Quebec to San Diego, and from Atlanta, Ga., to Vancouver, B. C., covering practically all regions of the United States and the cities of Southern Canada.

The readings were usually taken with the observed in a sitting position. Mercury and aneroids were used, but in the case of the aneroids they were constantly checked up with the mercury scale.

There were many more males than females. The ages vary from 3 years to 96 years, with an average age of 43.

A few charts accompany this and will show the method of recording data. For clinical and hospital work the heart load curve is put in at any time and the physician is enabled to get a clinical picture instantly. For those reading the literature a few points of difference are here referred to.

Toussig and Cook and others, including that leader among investigators, Korotkow, have claimed that the distention of the empty artery distad to the cuff coming suddenly was the cause of the first sound. Our investigations have never induced us to accept this in toto and for the following reasons:

The average observation, I take it, is made with the generally accepted technique of inflating the cuff and making the readings as the air is released. It seems impossible to make constriction rapidly enough to throw out of consideration the venous supply and the fact that it is superficial to the arterial supply.

In other words when we inflate the cuff the first effect is to shut off the return of the venous flow, and technique would necessarily have to be much altered to enable the observer to work rapidly enough to obliterate the radial pulse and not consider the veins corresponding in location to the radial artery.

It is readily demonstrable that the veins distad to the cuff are distended and this to a marked extent before the arterial pulsation is eliminated and that the conclusion that the artery is in a collapsed condition is in error.

On the other hand, the artery is distended, due to back pressure from the veins and capillaries and the fact that the artery distad to the cuff has received more blood—thus still more expanding it above its normal maximum distension, with every ventricular contraction up to the point of obliteration of the arterial pulsations.

It is quite possible to work so slowly that when releasing the air in the cuff, the venous flow is allowed once again to establish itself, and the artery be partially empty distad to the cuff (as described by Cook, Toussig, Ehret and others, but the average observer works much too rapidly to allow this balance to take place).

Laboratory observations differ materially from those made by physicians in general practice in being more extensive and more accurate.

Presystolic sounds are produced to some extent by whorls and eddies above the cuff. (This is the subject of another paper, which see.)

It would seem, if the myocardium and the distributing and peripheral blood vessels were in perfect accord with their nervous controls, that the systolic and diastolic blood pressure should have a definite ratio.

It is with the object in mind of demonstrating this ratio that the composite charts are shown in the accompanying illustrations.

There are, of course, certain exceptions to this rule, but we believe it will work to a very satisfactory degree in ninety-nine out of one hundred cases. The advantage gained is that it not only gives the individual normal but also the variation from that individual's normal.

The problem of heart load is comparatively new, but it is an intensely interesting one. The term heart load or cardiac load has been in use for several years by various investigators. How comes it, then, that in some individuals the heart load curve runs constantly lower or higher, as the case may be, than in other individuals of the same age, environment, general health, sex, etc.?

If then we find a variance in individuals under similar conditions must we not look for a cause in the controlling factor governing the pressure—and thus the supply of blood—in the conducting and distributing vessels?

We have believed this for some years and the results of the accompanying data are the fruits of this rather long continued investigation.

Now what do we mean by heart load? Various students of the problem have used the term or a synonym for about the same length of time.

*See author's "Altitude and Depression in Relation to Blood Pressure," *Med. Record*, March, 1917.

Its true significance and an effort to establish its fixed position seem to have been left until this series of observations were undertaken.

Attention was for a long time directed only toward the interpretations of the systolic; later came the undoubtedly much more significant interpretation of the diastolic and whether to restrict our attention to these two only, was a point of considerable discussion among investigators.

Do the systolics and diastolics really, per se, give us definite information? The fact of so considerable variation in individuals of the same age, sex, environment, habits, etc., threw much doubt on the often stated "normal" systolic of 120 mm. Hg. at 20 years of age. The one method of adding ½ mm. Hg. for every year above this age seemed faulty, unscientific and inadvisable, as did the other method of adding the age to 100 and calling this the given individuals "normal" systolic. Again the problem of satisfactorily answering what was a normal under various conditions arose. After collecting much data we are inclined to believe that a normal heart load curve for a given individual can be more or less absolutely fixed.

The percentage of heart load is the relation of the systolic and diastolic pressure and is arrived at as follows:

The heart load varies directly as the pulse pressure and inversely as the diastolic.

As an illustration we might use an automobile tire, with a slight puncture, in the process of being inflated. The diastolic would be represented by the tire itself, the pulse pressure by just as much as the inflating pump would introduce of air into the tube. The leak would lessen, of course, the increase due to the pulse pressure in proportion to the amount of the leak.

Using the formulae

$$S - D = PP$$
$$PP \div D = HL$$
$$HL - 53 = OL$$

(S = Systolic, D = Diastolic, PP = Pulse Pressure, HL = Heart Load, OL = Over Load.)

We can assume a systolic 135 and diastolic 88, then

$$135 - 88 = 47 \text{ PP}$$

$$88\ )\ 47.00\ (\ 53\%$$
$$44\ 0$$
$$\overline{\quad\quad}$$
$$3\ 00$$
$$2\ 64$$
$$\overline{\quad\quad}$$
$$36$$
$$\overline{\quad\quad}$$
$$88$$

Hence we can see from the heart load curve establishing 53% any variations from this would indicate a variation from normal to that degree of variation.

Of 91,800 observations on Caucasian individuals in the areas already noticed we find the average heart load to be slightly under 53%. Taking a group of 1,000 heart load observations at random throughout the entire series, we find an average heart load of 52.677%.

It seems possible, therefore, to set a heart load standard at 53% for general work and make all calculations with this as a basis, understanding that at all times the given individual under observation is having the determination made as to the *relative* pressures during systole and diastole.

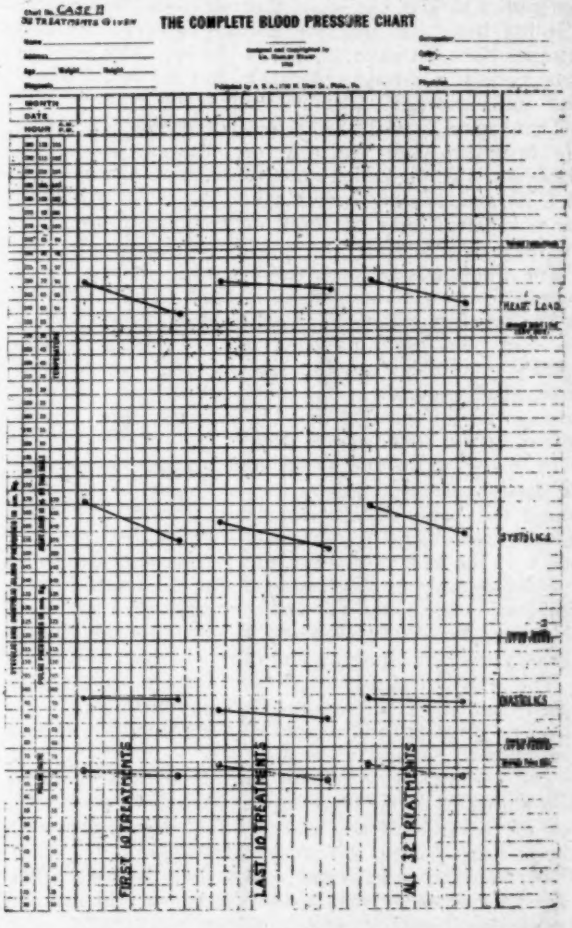
In these observations we have been led to believe that a variation of 8% or even 10% can take place with no indication of a serious perversion, per se, but if a second, third, or fourth observation shows more than 10% variation, we should immediately label it a pathological case and search for the cause, if the blood pressure reading has not already revealed it.

The daily average at hourly intervals is an important factor. The general average of an individual based on a considerable number of readings—and in certain cases environmental conditions should be studied—should approximate the fixed standard Heart Load.

The factors of meals, exercise, etc., may cause wide fluctuations which are not pathologic.

Of course, it is apparent to anyone that there may be serious perversion of the heart and circulatory mechanism and yet the Heart Load may be nearly normal. This increases, however, the efficiency of the blood pressure interpretations, rather than otherwise and differential diagnosis has a new ally.

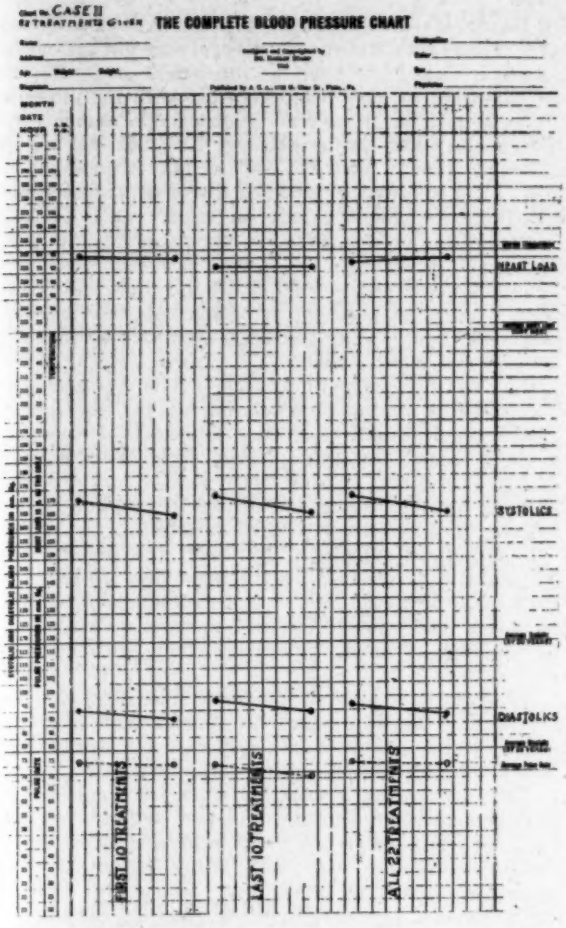
It is certainly most apparent that hearts with 20, 30, 40, 50, 60, 80, 120, 150, etc., percentage heart loads

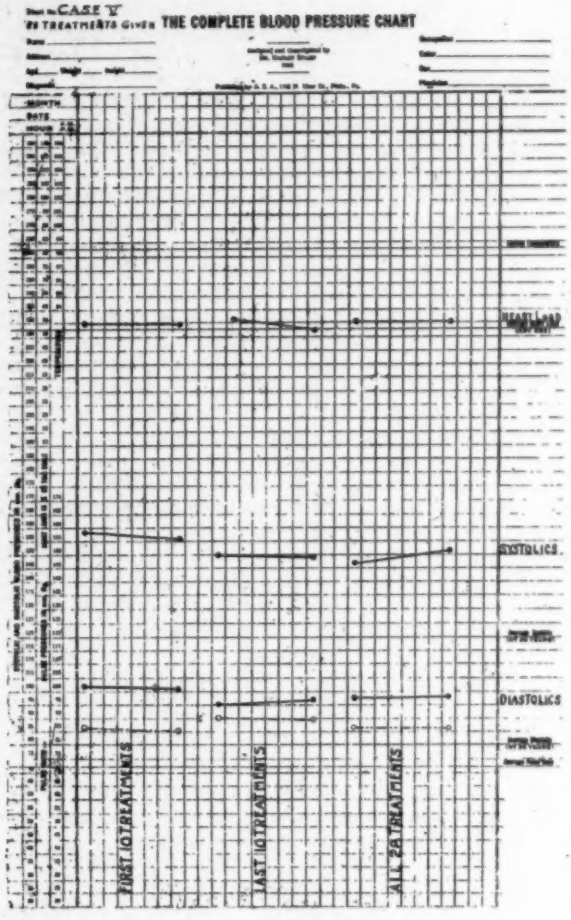



are not doing the same work, yet it is possible to have these variations and still have approximately the same systolic reading.

We shall endeavor to prove our point by using Dr. Askenstedt's own figures. Taking Case II from the point where both systolic and diastolic readings are given, we have:

| No. of Treatments. | Systolic. | | Diastolic. | | Heart Load. | | Over Load. | |
|---|---|---|---|---|---|---|---|---|
| 32 | Before. | After. | Before. | After. | Before. | After. | Before. | After. |
| First ten... | 171. | 157.3 | 99.3 | 98.6 | 72.2 | 59.5 | 19.2 | 6.5 |
| Last ten.... | 163.4 | 153.8 | 94.6 | 91.6 | 72.7 | 67.9 | 19.7 | 14.9 |
| All 32..... | 169.5 | 158.6 | 98.4 | 96.9 | 72.3 | 63.5 | 19.3 | 10.6 |




| 22 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| First ten... | 172.7 | 166.3 | 95.3 | 92.4 | 81.2 | 79.9 | 28.2 | 27. |
| Last ten.... | 173.4 | 167.6 | 98.5 | 94.5 | 77.0 | 77.3 | 24.0 | 24.3 |
| All 22..... | 173.3 | 167.4 | 97. | 93. | 78.6 | 80.0 | 25.6 | 27.0 |

If we read the figures correctly in these 32 treatments given in Case II we find an actual decrease in the overload, but not as much as one would expect to find in a complication of aortic sclerosis and diabetes mellitus with 20 minutes' rest between readings.

Notice, however, in the group of 22 treatments that the first ten treatments while slightly lowering the heart load, and thus, of course, the overload, it is so small that the resting position easily accounts for it.

Observe in the charts for Case II that they are ruled in with the heart loads, systolic and diastolic as given, and this shows in each case the slight decrease in systolic, diastolic and heart load or increase, as the case may be.

In the last 10 treatments of Case II, we find an actual increase in the heart load and the resulting overload. This is not so marked, however, until we study the entire group of all 22 treatments. Here we find an actual and still more marked increase in the heart load and its accompanying overload.

This brings out a point the writer emphasized in a paper several years ago, entitled "Does the Systolic per se Give Correct Interpretations in Hypertension?"

It is so misleading to accept a case as given in these 22 treatments of 173.3 systolic reduced to 167.4 systolic, without considering the heart load. We are reminded of the case of a very prominent physician who several years ago was asked to run for president of his state medical society. He was not in perfect condition and decided to try auto-condensation. This he did, but to his astonishment and indeed to the chagrin of the auto-condensation demonstrator his readings were as follows:

| Systolic. | | Diastolic. | | Heart Load. | | Over Load. | |
|---|---|---|---|---|---|---|---|
| Before. | After. | Before. | After. | Before. | After. | Before. | After. |
| 176 | 214 | 92 | 94 | 91.3 | 126.8 | 38.3 | 73.8 |

We do not wish to be misunderstood. The object of this article is not to criticise auto-condensation treatment in itself, but to urge greater car in its application.

We maintain that many cases should never have the auto-condensation, and in other cases the treatment is not contraindicated.

In Case V the gain for the first 10 treatments as given was 0.188 per cent., which is almost negligible. In Case V the gain for the second 10 treatments was 3.918 per cent., which would be accounted for by the rest of twenty minutes.

| Systolic. | | Diastolic. | | Heart Load. | | Over Load. | |
|---|---|---|---|---|---|---|---|
| Before. | After. | Before. | After. | Before. | After. | Before. | After. |
| 158.8 | 156.6 | 102.7 | 101.4 | 54.6 | 54.4 | 1.6 | 1.4 |
| 150.2 | 149.3 | 85.7 | 97.6 | 56.9 | 52.9 | 3.9 | .0 |
| 152.3 | 151.8 | 97.9 | 97.7 | 55.6 | 55.3 | 2.6 | 2.3 |

In Case V again we find for the entire 28 treatments a gain of 0.304 per cent., practically negligible again.

So we would have: First 10 treatments, less than 2/10 of 1 per cent.; last 10 treatments, less than 4 per cent.; all treatments, less than 3/10 of 1 per cent.

| Systolic. | | Diastolic. | | Heart Load. | | Over Load. | |
|---|---|---|---|---|---|---|---|
| Before. | After. | Before. | After. | Before. | After. | Before. | After. |
| 235.4 | 235. | 130.5 | 133.7 | 80.3 | 75.0 | 27.3 | 22.0 |
| 220.2 | 215.1 | 124.7 | 123.1 | 76.5 | 74.7 | 23.5 | 21.7 |

Now in considering Case VII the first thing is that the treatment was contraindicated by the blood pressure readings and the records show that the "usual course of treatment was both times cut short" because "the reduction of blood pressure by auto-condensation was not attended by improvement in the patient's symptoms?" What then?

We pass the conclusions, No. 2, 4 and 5, and the latter part of 3, because the data is incomplete for a study as made here, but do not agree with the conclusions in either No. 1 or first part of 3.

The four cases shown on Chart No. 1 were taken in order as they came in and no effort was made to select the cases.

In several the change was remarkable and so much more marked than in auto-condensation that we are led to inquire what would have happened in cases where the technic, as mentioned above, could have been employed?

We trust that others with records of work done will supply their material so that definite conclusions may be drawn as to the proper time to use the auto-condensation and when it is contraindicated.

## THE MELTING OF THE FLESH.

W. G. Anderson, M.D., Dr.P.H.,
PROFESSOR AND DIRECTOR OF YALE UNIVERSITY GYMNASIUM.
New Haven, Conn.

The subject of my story is the control of weight. The viewpoint is that of one who has passed the boundaries of comfort or safety and who has returned.

I have always been skeptical about the lasting benefits of religious revivals, that is so far as they keep the majority of converts permanently within the fold, because too many of the "trail hitters" act when in a state of great excitement, hence their actions are hardly rational. Later, when calmness returns, they too often relapse. The quieter methods of converting persons is preferable. I hold the same views regarding any hasty action on the part of those who read alluring arguments on the reduction of fat, and without giving the matter serious attention adopt the new tenets only to find that after brief trials they slip farther back than when they started. My entreaty is first for a thoughtful consideration of the problem as it appeals to the individual, next an approximately scientific study of his own case, then let him make out an honest and accurate bill of fare for one week showing what he has actually eaten, not only at meals but between them and before he goes to bed at night. This to include candy, alcohol, sodas, free lunches, in fact everything. Few patients are honest with themselves and fair to their doctors in this respect. Finally he is to follow out this simple program which it is easily possible for him to do.

I have not the slightest hesitation in predicting that any one who has crossed the normal weight border lines can, may and will be greatly benefited by following the suggestions given here in tabloid form. There is much real hope for any one who is not in an actual pathological condition. Any excess in weight may be considered pathological, but my plea is to him who might be, inconsistently termed, normally over fat or over weight.

It is one thing for a writer to launch his beliefs if he himself has never been through a course of training; it is another for that same author to have been fat and by taking his own medicine to have regained normal size. I was thin and in one college year put on twenty pounds. Then I purposely let the weight go far beyond the threshold of safety and comfort with the intention of reducing it in an easy and comfortable manner. In September, 1908, my weight was 135; the first of the following June it was 155—all weights without clothing. Then followed a period of rest from training during which the weight slowly increased to 170 pounds; this was October first, 1916. Today, four months later, the weight is 148 pounds. I have accurate scales, the weight is taken many times daily and under all conditions. Years of training in college laboratories have taught me how to take and keep accurate records, so I am sure the data is reliable.

It is not necessary to mention all the symptoms of over increase in the accumulation of fat, the loss of breath, the approach of inertia, noticeable deterioration in the muscular tissues, perceptible stagnation, increase in blood pressure, apathy both mental and physical, growing love for riding and dislike for walking, to say nothing of the expanse of the waist lines.

I had these symptoms and paid the penalty that Nature always exacts when a man thus violates her laws. Nature never fails to get a receipted bill for the pleasures that produce obesity; there is no such thing as avoiding payment. I paid this bill; then made up with Nature.

So many have written lucidly on this subject that I hesitated to add my experience, but as there are some unique features about this special research work I have joined the five-minute clinical talk company.

They say woman is vain, but when she wants lessons in real vanity she can turn to man and he can teach her. There is hardly anything more disgusting than a comparatively thin man with a big abdomen. It is unsightly as well as unhealthy. So possibly the aesthetic element will have more weight than the hygienic factor.

Let me mention the kind of diet, the forms of exercise, and some simple rules for reducing the weight comfortably and surely.

I have tried to stand in the shoes of the average man who has neither time nor opportunity to take baths, indulge in exercise or go to a gymnasium. As I sit here in my office I can go upstairs to one of the largest and best equipped gymnasiums in the world, if the impulse drives me I can go downstairs to a beautiful swimming pool or take any of the steam or hot baths that a modern temple of health offers; there are also bowling alleys, hand ball and squash courts, and oportunities for fencing, wrestling and boxing, in fact very nearly every form of indoor exercise and sport are to be had for the trouble of going up or down stairs, but in making these experiments I have avoided all of these fascinating devices. So the many dictums about going to a gymnasium may be at once discarded. These conditions are mentioned because the average man has no time to go to a gymnasium; he tires of a long program of moderately complicated movements; he won't use apparatus after it has been purchased and the novelty has worn off, yet he wants to reduce his weight. If this man is not willing to carry out the most simple gymnastics here mentioned I fear the "white man's burden" will prove to be the Old Man of the Sea, and he the Sinbad.

My free exercises are taken while on the streets, riding in any conveyance, going up and down stairs, or sitting in a lecture room. The only apparatus used has been the edge of a door and a small horizontal bar in the doorway of one of my house rooms. The gym-

nastics are so simple, so easily taken, so inconspicuous, and yet so effective that they are in every way worth while.

The exercise, par excellence, which is taken while dressing in the morning, while waiting for the breakfast to be served, while riding or walking to business, four times each morning, four times each afternoon and during the evening is this:

Arch the chest fully, throw back the abdominal walls and hold this position for sixty seconds. This widens and deepens the thorax and strongly develops the anterior and lateral abdominal walls (the rectus abdominalis, the external and internal abdominal muscles, and the transversali), it also brings strongly into action the erector spinae groups and the diaphragm.

Do you think it is ineffective? Then hold it for just two minutes by a good watch and you will change your mind. If this is taken only twelve times a day the effects are marvellous, but few indeed are the men who will keep it up for one month. It is easier to take a pill.

Next, several times a day lean against your desk and gently bend the body backward and forward.

Stand against the straight edge of a door, press the neck against the collar, arch the chest, and force back the abdominal walls, touching most of the back to the door. Hold this for sixty seconds, but take it three times a day. A suggestion is made that you do not do this more than three times a day, because there is danger of losing your enthusiasm.

At night before you retire, if your condition is normal in other respects, hang from the small bar and gently swing the body; later practice raising the knees while hanging. The cost of the bar is $1.50. This form of exercise causes a pronounced chemical change in the neuro-muscular machinery that is not much used during the day, and is in fact the reverse of standing on the feet.

Now for the heart and lungs: If they are fairly normal and the blood pressure is not too high, practice rapid walking with vigorous arm swinging. Ordinary walking is of little value as it is a reflex or automatic exercise and physically inexpensive. Walk more and swiftly, and ride less. The heart beats oftener, more forcefully, and the lungs act in accordant rhythm. Walk rapidly up stairs on every occasion.

This is the only kind of exercise I have taken since October 1st, 1916, and I am "in the exercise business" and have golden opportunities for apparatus work. I take a shower or sponge bath once a day. No Turkish baths, no steaming, no hot air, no rubbing, and the results have been astonishingly satisfactory.

After two weeks your chest will remain high, the abdominal muscles will have regained much of their pristine virtue, and the mental states have become such that there will come back to you some of the buoyancy and hopefulness of youth.

The most important factor, however, in reducing the weight is of course, How much to eat, and not so much what to eat.

Here the rules have been made as simple as the exercise. There is but one source of fat and that is food, remove the cause and the weight will drop.

My breakfast consists of a small piece of beefsteak, two pieces of toast buttered, and two cups of weak coffee, and that is all. If beefsteak is too expensive or not obtainable, two eggs cooked in the way that at the time appeals to me are eaten. If the body appears to demand sweet foods marmalade is added to the toast, or cakes and syrup are substituted. I eat no cereals with cream and sugar.

Lunch consists of a piece of pie and a glass of milk, if not hungry the lunch is omitted. If during the afternoon there is a feeling of slight distress an apple suffices. The ordinary objections made by the body to the sudden change in its program do not indicate dangerous conditions, they are more like the petulant complaints of a spoilt child. The dinner consists of small portions of soup and fish, two vegetables, ice cream or pudding, or pie, sometimes two are selected. No coffee, no bread, no extras—Why? I don't want them, so do not miss them.

Water is taken in generous amounts whenever desired whether at or between meals. There is no eating between meals, no candy, sodas, nuts or "nibblings" (the apple excepted, and that seldom). There is quite a variation in the kind of food, but no exception whatever to the amount. It has not been necessary to consider the heat values of foods (calories). I eat anything that appeals to me, but in limited amounts and eat fairly slowly.

The fight is not a hard one, but it is a persistent and consistent one. The person who will remain steadfast will win unless there are complications of a serious character.

In closing this report let me urge the reader to discriminate between that inflexible master, the APPETITE, and the actual needs of the body; they are two different things, but of the two the bodily requirements are more to be respected; their demands may form a safer criterion than do those of the appetite.

Remember this, you are to eat only when hungry, eat what at the time appeals to you and masticate your food.

At first there will be some trouble with the appetite, but the new habit is quite easily formed. Don't think of things to eat, don't study bakery or delicatessen windows, don't read alluring advertisements of food; keep up this treatment for four months and the results will be greatly increased physical comfort and peace of mind.

A fat person who wishes to reduce should take limited exercise only. It is a mistake to indulge vigorously because of the great appetite engendered and as much as the supply of food is curtailed the two conditions beget a depressed state of mind that in itself will cause a man to give up. Wash out the various organs with fresh arterial blood several times a day by the work mentioned.

The various forms of falling of the viscera due to the accumulation of fat (enteroptosis, splanchnoptosis, etc.) are greatly benefited by the simple abdominal gymnastics mentioned above at the same time the contour of the abdominal region becomes quite normal again.

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### Vaccine Treatment of Whooping Cough.

Bloom concludes that:

1. The treatment of pertussis by vaccine therapy is most efficient, providing the procedure in following it is correct.
2. Give large initial dose, not less than 120,000,000; increase 60,000,000 for each succeeding dose, and give maximum quantity every other day until one of the marked symptoms shows an appreciable improvement. Continue every three to four days until cured.
3. Vaccine is preferable because:

(*a*) No reaction.
(*b*) Duration averages only 28 days.
(*c*) The loss of weight is minimum—14 ounces.
(*d*) The intensity and number of coughing spells becomes less after three injections have been given.
(*e*) Vomiting ceases after six injections.
(*f*) Sleep is not disturbed after 5 to 12 days.
(*g*) No complications in 13 cases after 8 to 12 months' duration.—(*New Orleans Medical and Surgical Journal*, Sept, 1916.)

## LIVING ON TWENTY-FIVE CENTS' WORTH OF FOOD PER DAY.

LAWRENCE IRWELL, M. A., B. C. L.,
Buffalo, N. Y.

The exact purpose of the Life Extension Institute's experiment of feeding probationer policemen on twenty-five cents' worth of food per day and "keeping track" of their weight is not evident, because no one who is familiar with practical dietetics would deny that sufficient protein, carbohydrates and fat can be obtained for a quarter of a dollar to sustain life for twenty-four hours and prevent loss of body-weight. This process can undoubtedly be continued for some weeks. There are reasons, however, why twenty-five cents at the present time will not buy satisfactory meals every day for an indefinite period.

As the amount of protein, carbohydrates and fat consumed by each policeman every twenty-four hours has not appeared in the New York *Times,* although that paper has devoted considerable space to the "experiment" almost every day during its progress, criticism of the quantities provided is impracticable at the moment. According to the old Voit table, a man weighing 150 pounds requires 118 grams of protein in twenty-four hours; according to Atwater, he needs 125 grams. More recently, Chittenden has concluded that a man of this weight doing light work requires only 60 grams. In the *Journal of Physiology,* however, Benedict has explained why he considers this amount too low.

The prevailing custom is to regard animal and vegetable protein as identical because no chemist has discovered any difference of importance extending through both classes of proteins. Some difference, however, appears to exist. For example, gelatin, unquestionably protein, will not take the place of beef. Maize cannot be used systematically instead of wheat, although zein, the nitrogenous constituent of that grain, is believed to be true protein. Quoting from a letter received from Professor Chittenden a few years ago: "Regarding the nitrogenous material of vegetable foods, there is a great lack of knowledge as to the exact proportion of the nitrogen which exists as true protein. It is for this reason that I have advocated, and still advocate earnestly, the advantages of a more or less mixed diet." The diet of the probationer policemen was mixed, but very little animal protein was provided, probably on account of its cost. Dried beans and peas may contain most of the protein that a man is supposed to require, yet, even if they do, evidence that anything approaching eighty per cent. of that protein is utilized by the human body, as is probably the case with beef, is absent. However, a part of the nitrogenous material contained in beans and peas may be amide. For very many sedentary workers they are a most undesirable food because, however cooked, they cause flatulence. They also produce flatulence when eaten by some policemen. These men, however, are not on a diet under medical control. Dried beans and peas, usually baked, formed a regular part of the "experiment" meals in which the supposed importance of calories is greatly exaggerated. Before the caloric value of foods can have in practical dietetics the high place which certain theorists attribute to it, some method of ascertaining the number of ingested calories which each man excretes unused must be discovered. This point should not be overlooked.

There are two reasons why the diet provided for the policemen at twenty-five cents per day would not constitute a satisfactory diet for an indefinite time. The first is that to secure regular and sufficient peristaltic action day after day bulky foods are, for most persons, essential. The retail price of carrots, turnips and parsnips is at present prohibitive if each individual is limited to twenty-five cents per day for food. Secondly, although an exact definition of what constitutes a vitamin may be difficult to give, there is no doubt that the ingestion of vitamins is necessary to maintain thoroughly good health. As is well recognized, they are most readily obtained by eating uncooked salads and fruit. The "rookies" were occasionally given sliced oranges and bananas, but as no single meal can have cost over twelve cents without seriously injuring the other two meals, the quantity must have been extremely small. (As bananas consist to a great extent of starch, and as those which come to the United States are plucked when green, their food value is highest if they are hung till ripe, that is, till the skin is discolored, and are then baked.) The prevailing retail prices of cabbage, to be eaten raw, of course, lettuce and celery make impossible the employment of these foods when three meals must be provided for a quarter of a dollar.

The "experiments" were supervised by Dr. Eugene Lyman Fisk, who is one of the writers of "How to Live," authorized and prepared by the Life Extension Institute, on page 47 of which one reads that "among the worst foods are putrefactive cheeses, sweetbreads, liver, kidneys . . ." On January 24, however, the probationer policemen dined upon one of the "worst foods"—liver, probably because satisfactory meat—beef or mutton—could not be obtained at the very low price determined upon. Here is, of course, additional evidence that for an indefinite period twenty-five cents per day will not, at existing prices, buy thoroughly satisfactory food. Liver occasionally may do no specific injury, although the excretory organs of animals are not very desirable foods.

On page 46 of "How to Live" one reads: "Food must have a pleasing taste and flavor and then must be enjoyed in order to be most readily assimilated." . . . "In general, it is extremely unhygienic to eat foods which are not relished." Nevertheless, very many people would be unable to relish the meals provided for the "rookies." The tea and coffee, if bought in a retail store, must have been of decidedly low grade. They were apparently not infrequently consumed without sugar, a plan which does not produce "a pleasing taste and flavor" to every one. Taking the program for January 19, printed below, clipped from the New York *Times,* salmon croquettes and peas, both made presumably from canned goods, may provide a satisfactory lunch, yet if followed by baked split peas as the *pièce de resistance* for dinner, very many men would say that there was little enjoyment in dining, although Fisher and Fisk assert ("How to Live," p. 46) that "the net result of reforming one's diet is not to diminish, but to increase the enjoyment of food."

Breakfast: Oatmeal, milk, toast, butter and coffee; this contained 870 calories and cost 7 cents; luncheon: salmon croquettes with peas, date bread, butter and tea, cost 8 cents and contained 990 calories; dinner: baked split peas, stuffed green peppers, stuffing consisting of spaghetti and cheese, rice and samp, whole wheat bread, sliced oranges and bananas and tea and milk, cost, 10 cents, contained 1,375 calories.

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Carious teeth with pyorrhea alveolaris in mother or nurse may be responsible for much infantile infection.

# THE PROBLEM OF OPERATIVE INTERFERENCE IN GASTRIC CANCER FROM THE STANDPOINT OF THE INTERNIST.

A. L. BENEDICT, A. M., M. D.,

CONSULTANT IN DIGESTIVE DISEASES, COLUMBUS HOSPITAL; ATTENDANT, MERCY HOSPITAL; AUTHOR OF GOLDEN RULES OF DIETETICS; EDITOR OF THE *Buffalo Medical Journal*.

Buffalo, N. Y.

A surgical writer has recently asked why the medical practitioner does not always refer his cases of gastric cancer for early operation, which has a total immediate mortality of 20-25 per cent. and which can probably effect a radical cure in almost as large a percentage of fairly favorable cases, when, under medical treatment, the ultimate mortality is 100 per cent.

This is a pertinent question, which the internist must consider seriously, or rather which he does consider seriously and anxiouly. So far as can be forseen at present, saving always the hope of discovery of some method other than the knife to eliminate a malignant process, medical treatment has nothing to offer the cancer patient but a 100 per cent. death rate, with more or less prolongation of life, by no means generally desirable, though with more or less relief of pressing symptoms.

On the other hand, with increase of personal surgical skill, added experience, greater post-operative care, and the early references of cases, it is fair to state that the mortality, including the risk of anaesthesia and post-operative accidents in the most general sense, and the failures in no sense chargeable to surgery but to the inevitable unfavorable factors of this kind of cases, may be reduced to 10 per cent., possibly to less. The same factors bid fair to increase the percentage of cures so that we may reasonably expect a quarter of all cases, instead of a quarter of favorable cases, operated on by the best surgeons, to be permanently relieved. And, as to the intermediate percentages, it must be conceded that, even when an absolutely radical operation cannot be performed, various palliative measures, either avowedly so, or undertaken with attempt at eradication but inevitably failing of perfection, may be expected to yield longer periods of good general health and freedom from restrictions, than can be hoped for from medical treatment, however skillful.

It can no longer be pleaded that the reluctance of the laity vetoes the advice of the physician. On the contrary, the laity has been so thoroughly imbued with the desirability of surgical measures that it is often the patient who first suggests them, not only in suspected cancer but for the most varied ailments. I recall a patient with no suspicion of cancer who objected to the passage of the stomach tube. I told him that there was no other way to determine what was going on inside his stomach, except to cut him open and he promptly chose the latter alternative, and it was only with considerable difficulty that I backed out of the dilemma. There remain, of course, many patients who dread operation, a few who absolutely refuse it, but, for the most part, a patient can be persuaded into an operation if the attendant deems it necessary.

It rests with the internist, therefore, to explain why the great majority of patients with gastric cancer are not referred for operation in time for the 25 per cent. of cures theoretically obtainable and, likewise, the responsibility for the fact that the immediate mortality of such operations is about 25 per cent. instead of 10 per cent., rests with the internist rather than with the surgeon.

In this discussion, it is assumed that both the surgeon and the physician are competent, not merely in the legal sense of maintaining an average status that can be used as a defense against malpractice suits, but according to professional standards. On the other hand, the term competent is used in a reasonable sense, as applicable generally, and without limitation of the problem, or in other words of the chances of the patient to the very few operators and diagnosticians who possess a degree of mechanical skill or detective shrewdness, respectively, and of judgment in either case, which is admittedly far beyond ordinary human capacity. It may also be well to predicate absolute sincerity and broadmindedness on the part of both surgeon and physician. These, for the physician imply that, on the one hand, he will not withhold a case from operation for mercenary reasons or out of jealousy, and that, on the other hand, he will not advise operation injudiciously for the sake of waiving responsibility. For the surgeon, the implication is against unnecessary operation, especially in late, hopeless cases, against gastro-enterostomy and other easier, palliative operations unless radical procedures are impossible and unless something more is to be expected of the palliative operation than can be afforded by medical treatment, including local measures, and also, as in operative work generally, that the patient shall be given the benefit of expert medical skill before and after operation.

It is natural to suppose that the problem of deciding for or against operation for gastric cancer involves a series of cancer cases. At first thought, such a proposition sounds like a truism. But, as a matter of fact, the series of cases to which the problem applies excludes a considerable number of cases of cancer and includes a still greater number of cases which are not cancerous at all.

It would be useless to attempt exact statistic conclusions, but it may be said, that under existing conditions, a good many cases of cancer of the stomach may be immediately excluded from consideration of radical operation, or, indeed, from that of gastro-enterostomy, etc. In this connection, it ought to be fully understood that, barring relative disproportions in experience, the decision for or against operation and the general choice of operation should devolve upon the internist and that it is equally the duty of the latter to urge an indicated operation and to advise against a hopeless one. The fact that series of gastric cancer operations show mortalities of 25 per cent. does not mean either diagnostic or operative incompetence, nor inevitable conditions at this date, but merely that internist or surgeon or both allow vivisections to be performed, to which the patient submits or on which he insists as a mode of suicide.

The claim is not intended that we can distinguish with certainty between inoperable and operable cases, but simply that, in a considerable number of cases, either at the time of the first complete examination or at the time when the patient is willing to accept operative interference, we can definitely state, with a very small risk or error, that the time for operation is past. In a few cases, we may still be uncertain that the case is cancerous while positive that, if cancerous, it has passed the operative stage.

For example, H. W. S., 1908-9, No. 2, was seen in consultation late in 1908 for an acute hemorrhagic, peptic ulcer. In the summer of 1910 he had two more quite sharp, arterial hemorrhages, subsiding quickly. There was achylia gastrica but neither tumor nor ischochymia. Exploratory operation was suggested but refused. In November, 1910, he was seen again and the

stomach was palpable on account of the smooth, uniform hardness of the anterior wall. There was no ischochymia and no gross evidence of hemorrhage. Even at this time the writer would not make the definite diagnosis of cancer, but felt justified in advising against operation on the ground that there was no definite indication for operation except the eradication of the abnormal tissue and that if this were cancerous, the case had progressed too far. Operation was, however, performed, abandoned on inspection and palpation of the stomach, and the patient succumbed in a couple of weeks.

Up to date, there is no diagnostic test for cancer of the stomach which has been found reliable, either positively or negatively, at a satisfactorily early period. In other words, if the diagnosis is reasonably certain, it is highly probable that it is too late for radical operation and that, unless some special indication is present, as nearly absolute pyloric obstruction in a patient otherwise in good condition, or obstinate and apparently localized hemorrhage, palliative operation will do no more good than local and general medical treatment.

Repeatedly, the internist is brought face to face with the problem of a suspicious case in which he advises operation. The patient takes the ground that, if the doctor is sure that the case is cancer, he will submit but that he will not submit to the risk, loss of time and expense of an operation on guesswork. The physician gets it coming and going in these cases. If the case turns out to be cancer, patient, surgeon and the subsequent diagnostician who sees the case after it has developed crucial signs, blame the former attendant for not having insisted on operation. If the case proves not to be cancerous, he is blamed for having considered an unnecessary risk and expense; perhaps is suspected of being in the commission business—for the laity has been thoroughly impressed by the profession with the frequency of this practice on the part of the other fellow—and, at best, is regarded as an overconscientious, fussy old fogy whose strongest point is a willingness to admit his own lack of diagnostic ability.

The better informed the internist, the harder does the problem become. If one is imbued with the notion that lack of HCl, presence of a little lactic acid, Oppler-Boas bacillus, ischochymia, achylia, emaciation, anaemia, etc., etc., justify the diagnosis of cancer, that blood means either peptic ulcer or cancer and that the former usually undergoes malignant degeneration later, the problem is much simplified. Likewise, the inexpert, in a suspicious case, can usually feel a tumor.

Surgeons have remarked that the physician must not forget that a case in which no tumor is palpable, may still require operation. This is a mild way of putting the matter. It is the tumorless cases that require operation earliest and, the denser and more easily palpable the tumor, the longer the duration of the hopeful stage of operability.

If desired, it may be taken as a personal confession that, excluding cancers which are certainly or probably past the hopeful stage, the cases in which the internist strongly suspects cancer turn out to be non-cancerous in about 75 per cent. of a series. Bearing this fact in mind, the fact that medical treatment of cancer results eventually in 100 per cent. of deaths, and that 25 per cent. of fairly favorable series can be saved by operation, does not exactly represent the alternative placed before the physician.

Surgeons generally admit a mortality of 20-25 per cent. in operations on gastric cancer, but, excluding well marked cases in which operation is generally contraindicated, it is fair to reduce this to 10-15 per cent. Counting the vivisectional mortality, risk of anesthetic, pulmonary, renal and miscellaneous conditions, and remembering that, for the most part, we are dealing with elderly, badly nourished, feeble individuals, often with pronounced vascular, cardiac, renal, pulmonary, hepatic and other lesions and often presenting alcoholic or adverse histories, it is not unfair to assume a mortality of 5 per cent. even if there proves to be no cancer. This does not imply that, for operations of the grade of coeliotomy and inspection and handling of viscera, without actual visceral operation, in patients of all ages and states of general health, 5 per cent. die, nor does it mean that 10-15 per cent. of cancer cases and 5 per cent. of suspected but non-cancerous cases die on the table. Nor does it mean, that 5 per cent. of suspected case die within the period of convalescence from an exploratory operation in the hands of expert operators, who have had the opportunity to develop dexterity, and the ability to arrive rapidly at a diagnosis, from the experience with large series of abdominal cases. But it represents an approximation of the true risk, for the country as a whole.

Let us ignore general causes of death applying equally to cancerous and non-cancerous cases. In one case in which the writer was anxiously considering the question of operative interference in a case of suspected cancer, a railroad train relieved him of the responsibility.

Looking ahead, say a month, the mortality of the suspicious series, averaging with the knowledge derived from hind-sight, 25 cases of cancer and 75 of other conditions (chronic gastritis, achylia, Addison's disease, hepatic sclerosis, etc.) is zero on the laissez faire plan. If subjected to operation, three or four of the 25 cancer cases and three or four of the non-cancerous will have died. Looking ahead indefinitely, 19 or 20 of the 25 cancer cases will have died in spite of operation and probably five more of the non-cancerous cases as the result of late sequelae of operation such as peritoneal adhesions, hernia, impairment of resistance by shock, remote effects of anaethetic, causing renal, pulmonary or other lesion but not immediately fatal.

In other words, it is not a simple matter of losing 100 patients by advising against operation and 75 by advising for it, but of facing the responsibility, within a month, of six or eight deaths with operation as against none without it while, eventually, the statistics are about evenly balanced.

It should not be concluded, however, that the writer opposes or fails to advocate, operation. But, the problem cannot be reduced to one of percentages nor freed from the element of discrimination for the individual case. Every step in making exploratory operation safer, every advance in the early diagnosis of cancer, simplifies the problem and every case in which medical and surgical men exchange the benefits of experience tends to save life, even without any actual advance in either operative or diagnostic skill.

## A Method of Rendering Celluloid Plastic.

Place the celluloid in ether solution, in a few hours the celluloid will swell slightly and become soft as jelly. Take it out of the solution, mould and let dry. The celluloid will resume its original thickness and appearance, but retain its new shape. Ether also being one of the most powerful bactericides, will effectually sterilize the mould and make it ready for insertion.—(*Brit. Med. Jour.*)

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Fish cannot live in foul water nor man in foul air.

## HEALTH INSURANCE AND THE PHYSICIAN.

EDWARD C. BENNETT, M. D.
Brooklyn, N. Y.

If health insurance is put through in a way which will prove economically inimical to the welfare of the medical profession, our status will be much the same as that of socialized wage-earners.

The framers of the Health Insurance Act have admitted that the most difficult problem is how to take equitable care of the medical profession. We must see to it that we are not exploited under the act. Even granted that a just plan for the compensation of the doctors were finally worked out and applied, it could be expected to prove efficient only for a comparatively short time, for the reason that a millennium would come to pass for the people in matters of health, if all that is claimed for health insurance is borne out, plus the intensive co-operation of the public health authorities along preventive lines. Personally, I believe that this claim of beneficent results, in so far as the public health is concerned, cannot be disputed, but what about the poor doctor? He would go into bankruptcy and the scrap-heap. Therefore, in order to solve this difficult problem regarding the financial status of the doctors under the Health Insurance Act, would it not be advisable, at the outset, to reduce the number of doctors in practice by a process of retirement and pension, as in the Police Department? I refer to the class of medical men who have wrought well in their lives and have grown old in the service. This would make room for the younger men in the profession, would relieve the burden of an overplus of doctors, and a limitation could even be put on the medical college grist mills. Let the State close the colleges for a few years. The theme of the day, on the part of the public health authorities and the American Association for Labor Legislation, is the prevention of disease. The medical profession has consistently advocated and preached hygiene, sanitation and the prevention of disease. From a commercial standpoint this has been poor policy on our part, but we have been unselfish, and someone has said we are a charity organization within ourselves.

The medical profession is now beginning to view with alarm the economic status that medical legislative bills promise to confer upon us. There has never been a time in the history of the profession when solid and powerful organization was so necessary as now for the protection of our interests. We should be one great brotherhood. Every man should stand for the just cause of all. The slogan should be "All for one and one for all." It is obvious what the medical profession could accomplish if we were united into one great brotherhood. By such unified action we could paralyze or annihilate all legislation inimical to us.

Personally, I am not opposed to health insurance. I believe that social insurance, under existing conditions, is humane and sound in principle, and that it will confer large benefits upon great groups of our population and upon the State. Nevertheless, if the wage-earner received a proper competence there would be no crying need for health insurance, if indeed it were needed at all. But since the betterment of his economic status cannot be hoped for in any great degree, then it must be conceded that the panacea for the wage-earner is governmental medical aid.

475 75th Street.

## HEART DISEASES IN CHILDREN.

J. EPSTEIN, M. D.,
New York.

The heart in the child is proportionately larger to the rest of the body than the heart in the adult. It beats more rapidly than the adult heart and the circulation moves at a greater speed. The thin elastic walls of the young heart easily dilate under the stress of an abnormal circulation but readily contract to their former size and shape when the disturbing element in the circulation is corrected. The heart may also dilate as a result of weakness of its walls from degeneration or from a loss of muscle tone. In diseases of the heart from any cause, it is its ultimate dilatation which leads to cardio-vascular failure and to a fatal result.

The etiology of heart diseases and disturbances in children is in many respects different from that in the adult. Arterio-sclerosis, chronic interstitial nephritis, syphilis, alcoholism, plumbism, and chronic broncho pulmonary affections which cause disease of the heart in the adult are not present as etiologic factors in heart diseases of children. In the young, the heart may be abnormal from birth or the abnormality may be acquired later through infectious diseases, or there may be simply a disturbed cardiac action as a result of malnutrition or an unstable nervous control and balance. All heart disorders in children may be divided into three classes:

(1) Congenital.
(2) Acquired.
(3) Functional.

Congenital heart diseases are not uncommon in infants and young children. As a result of malformation or endocarditis during intra-uterine life, the infant may come into this world with a crippled heart. The common lesions in congenital heart diseases are stenosis of the pulmonary artery, patent ductus arteriosus, patent foramen ovale or patent interventricular septum. One or more of these deformities may be present. Care should be taken not to mistake a congenital heart disease for an acquired disease. Heart diseases in children under three years of age are almost always congenital, and under five years of age are frequently congenital. The right side of the heart is usually enlarged and the murmurs which are best heard at the base of the heart or along the left sternal border are in most cases rough, loud, rasping, and frequently have no exact relation to the normal heart sounds. There may be cyanosis and clubbing of the fingers. The child born with a sick heart may be stunted in growth and in every other way below par. Little can be done to repair nature's mistakes. The child must always live within the bounds of its cardiac capacity. It must not over-exert itself in play with other children or at school. A nutritious diet and an occasional general tonic should be given.

Acquired or inflammatory heart diseases are quite common in children as a result of various infectious diseases, specially rheumatism. There may be an endocarditis, myocarditis, or pericarditis, but the most frequent lesion is an endocarditis with mitral involvement, though the other valves may also be affected. A child with heart disease may not complain of being ill because the subjective symptoms of heart disease such as tiredness, faintness, palpitation, dyspnea on exertion and precordial pain or distress are not fully appreciated by the young child. Children, as a rule, pay little attention to their subjective feelings of discomfort or to symptoms of ill health because they have little knowledge of the normal functions of the body and of the normal

conditions of health. On examination of the heart, there is usually a strong visible cardiac impulse, occasionaly a palpable trill, the heart is frequently enlarged to the left and the murmurs which may be systolic, presystolic, or diastolic are soft, blowing, well conducted and persist under all conditions of rest and exercise. The presystolic murmur of mitral stenosis is limited to the apex and is of a rough splitting quality. The treatment consists mainly in giving the heart less work and more rest. Good food, salicylates when there is a rheumatic history, and cardiac tonics when necessary.

Functional or nervous cardiac disorders are quite frequent in children and are in many cases mistaken for organic disease. Many a child is sent from school to be treated for heart disease when the trouble is not in the heart, but in the child. Malnutrition, anemia and nuerasthenia are usually the cause of these functional cardiac disorders and they give rise to a general loss of muscle tone in which the cardiac muscle shares. The heart becomes atonic, dilated and gives rise to murmurs which are called functional, hemic, or accidental, but which should more properly be called atonic murmurs. These murmurs are inconstant, systolic in time, soft, short and poorly transmitted. The treatment should be good food, fresh air, plenty of rest and general tonics.

Arrhythmias or cardiac irregularities are not uncommon in children. They are caused by some abnormality in one or more of the fundamental physiologic functions of the heart. For the heart to functionate properly, it must possess the following five basic physiologic attributes:

(1) Stimulous production; it is the power of the heart to produce a stimulous starting in the sino-auricular node.

(2) Stimulous reception; it is the power of the heart to receive a stimulous which started in the sino-auricular node.

(3) Stimulous conduction; it is the power of the heart to conduct the received stimulous from one part of the heart to another.

(4) Stimulous contraction; it is the power of the heart to contract when stimulated.

(5) Stimulous retention; it is the power of the heart to retain the stimulous and remain in tonic contraction even during cardiac rest or diastole.

One or more of these primary cardiac functions may become abnormal and give rise to various forms of irregularities or arrhythmias. Sinus arrhythmia or youthful irregularity, or vagus irregularity is quite common in children. This irregularity arises in the sino-auricular node, which is the normal pace maker of the heart and controls its rate and rhythm. It is characterized by an irregular heart action, being rapid during inspiration, slow during expiaration and normal on holding the breath or rapid breathing. Tachycardia in children is frequent during emotion, excitement, pain and fever. Bradycardia is usually present during convalescence from acute infectious diseases and in jaundice. Extra systoles are present in children as a result of nervous irritability. Auricular fibrillation, auricular flutter, heart block, and pulsus alternans are uncommon in children. These various cardiac irregularities in children are usually the result of an unstable nervous system and rarely due to strucural cardiac diseases. The treatment consists in removing the cause of the nervous irritability and in proper feeding, rest, and nerve tonics or sedatives.

A diagnosis of heart disease should never be made on the presence of a murmur only. While a murmur may be a sign of heart disease, it may also be present in a heart of sound structure, and the absence of a murmur does not prove a normal heart. It is the age, history, and the general condition of the patient, the size of the heart, the character of the normal heart sounds with or without murmurs that indicate the kind of heart trouble, whether congenital, organic, or functional. On a correct diagnosis of congenital structural lesions, acquired structural lesions, and functional disturbances depends the proper treatment and the entire future career of the child in his choice of occupation and struggle for existence. The prognosis of heart diseases depends less on murmurs or other objective signs, but more on the subjective symptoms of the functional capacity of the heart to carry on a normal circulation under all conditions of rest and work.

222 East Broadway.

# Five Minute Clinical Talks

## HYPERSECRETION.

GEORGE F. BUTLER, M. D.,
MEDICAL DIRECTOR OF MUDLAVIA.
Kramer, Ind.

To find and remove the cause of these attacks should be our first endeavor. If found to be in concurrence with the gastric crisis of tabes, injections of mercury or salvarsanized serum in spinal canal should be begun at once and pushed to tolerance. If associated with a gastric ulcer this cause must be remedied. Should pyloric stenosis be present, treatment should be directed to its removal.

When we get a typical case, where no pathological lesion is apparent, we may find the cause and relieve the condition by stopping the use of alcohol or tobacco and correcting any errors in diet. Relief from mental strain and overwork may be all that is necessary. Examination should be made closely for any motor insufficiency. During the interval between attacks a test breakfast should be given to determine the presence or absence of hyperchlorhydria.

For the attack proper it is well to administer an alkali at once, and if there is no improvement within a short time, to practise stomach lavage with a strong solution of sodium bi-carbonate, using from one to three quarts, and then leaving a small amount in the stomach. The bowel should be cleaned at the outset with a soap suds enema, to which a little glycerine or olive oil has been added. To this can be added .3 to .6 cc. (5 or 10 min.) of tincture of belladonna or .0003 to .0006 (1/200 to 1/100 gr.) of atropin in order to check the secretion.

A very good prescription is equal parts of tincture of belladonna, tincture of hyoscyamus and the tincture of opium; of this mixture .5 to .7 c.c. (8 to 12 minims) are given ten minutes before meals in a little water. After meals the following may be given: magnesium hydroxide and sodium bicarbonate, of each 8 grams (2 drams); white sugar and precipitated calcium bicarbonate, of each 16 grams (4 drams); mix and make twenty-four powers; after each meal take one in a little Vichy.

As soon as the stomach has been lavaged, the patient may be given large doses of sodium bromide or strontium bromide, provided he is seen early enough. It is practically useless later in the disease.

*Diet.*—The giving of albumin water, using the whites

of eggs in milk, in order to neutralize the acidity, is useful in the early stages. If the patient complains of thirst, sodium bicarbonate in hot water, given in small quantities or rectal enemata of normal salt at 115° to 118° F. will generally relieve it.

Starvation should be practised for the first twenty-four hours, then liquid diet may be given, gradually returning to a full diet.

In the continuous type, particular attention must be paid to the hygienic surroundings of the patient, as well as to his mental status and to exercise. The use of alcohol and tobacco is interdicted. If the patient is working or living in surroundings which are not congenial, a change should be made if possible. Food should be well masticated and condiments avoided. In fact, we may use practically the same diet as that in hyperchlorhydria, that is, an almost entire vegetable and fruit diet, cutting down the albumens and proteins, except where there is malnutrition, in which case they should be pushed for a while. If dilatation is present, all food should be given in semi-solid form, as it digests more readily in this form.

Lavage should be practised in all cases. Most cases are best lavaged in the morning when the stomach is empty. In some cases the tube is better used in the evenings, and again in others it is necessary to wash the stomach out daily. This is indicated where there is dilatation with retention. For lavage, the best agent is a strong alkaline solution, generally of sodium bicarbonate. A few times I have used a 1/3000 or even 1/1000 solution of silver nitrate, following by clear water.

For the control of excessive secretion, nothing equals atropin .0006 gm. (gr. 1/1000) or tincture of belladonna, .6 to .7 c.c. (10 to 12 min.) three times daily. I have used bismuth subnitrate in some cases, but avoid it as a rule owing to its constipating effects.

For the pain it is well to try, first, lavage with a sodium bicarbonate solution, using from 7.7 to 15 gm. (2 dr. to 4 dr.) to the quart of water, and at a temperature of 110° to 115° F. when absolutely necessary, a .016 to .03 gm. (¼ to ½ gr.) of codein, or an .008 to .01 gm. (⅛ to ¼ gr.) of morphin may be necessary, but should be avoided if possible.

In my hands intra-gastric galvanization has not been a success.

## THE ADVANTAGES OF TREATING COLDS WITH VACCINES.

G. H. Sherman, M. D.,
Detroit, Mich.

The importance of treating nose, throat and bronchial infections, commonly known as colds, by therapeutic immunization cannot be overestimated, because all the more serious ailments, like pneumonia, endocarditis, rheumatic fever, mastoiditis, sinus infections and eye infections have their origin in these so-called colds. In case there is a low systemic resistance to the pneumococci or streptococci, which are responsible for these localized infections, the infective process is liable to involve the blood stream and do great damage before it is brought under control; but, if these minor infections are treated with bacterial vaccines an active immunity is established before the more serious complications have a chance to develop. In all my experience I have never known of a pneumonia or other serious complication to develop where vaccines were employed in the preliminary infection.

It is true that most people do not consult a doctor when they have a "cold," but this is more the doctor's fault than the patient's. If doctors would use vaccines regularly in the treatment of "colds" and show the patient that something really worth while can be accomplished, very few of these sufferers would neglect going to the doctor.

Mixed infections being common, a mixed polyvalent vaccine containing pneumococci, streptococci, staphylococci and the micrococcus catarrhalis should be employed. If an influenza epidemic is prevalent the influenza bacillus should also be added. Early treatment is important. With few exceptions marked improvement will be observed within one or two days. The vaccine should be repeated with a slightly larger dose on the second day. As a rule the cold will have cleared up by the third day of treatment. It is always advisable, however, to give a few more doses of vaccines at four or five day intervals to establish a lasting immuity, otherwise the patient may have a relapse.

## A CLINIC STRIKING ONE FOR DIRECT METHODS.

William J. Fairfield, M. D.,
Norwich, N. Y.

Recently I was consulted by a man who, while loading lumber was suddenly taken with a severe pain. He was stooping a little to favor his left chest, and his right hand was locked over the chest at the left and a little below the heart. He was breathing as lightly as possible and slightly on the "cogwheel" type—also stepping along in a "gum shoe" way, all evidencing sharp chest pain.

The man located the pain where his hand was pressing. I made an examination and quickly confirmed the subjective correctness where the nerves seemed to be "crying," and began to race around under the arm toward the spine. I pressed my fingers at the side of the seventh and eighth dorsal vertebrae. The patient suddenly contorted, grunted and cried "ouch."

The man was cold and depressed from pain and fear for heart and life, but there was no chill. fever infection, "rheumatism of chest or nerves," pleurisy, pleuralgia, neuritis, nor any signs or history of a traumatism at the seeming site of the "crying" nerves. An unbaked Chiro-neophite, a product of a diploma mill, would have probably called it a sub-luxation of the spine, but it was not nor could it be without a fracture.

The condition I found in this patient's spine was somewhat similar to the condition in the bowel which Sir W. Arbuthnot Lane discovered and is now known as the "Lane Kink." My patient at every breath was calling for medicine to relieve the pain and was astonished when I declined to administer any drug, but told him to take a horizontal face-down position on a low table. In this position, I had his shoulders and hips raised on hard pillows to get his body relaxed and to counteract his forward contractions. I then placed the ulnar saddle of my left hand over the seventh and eighth dorsal vertebrae, with firm pressure. Now having my right hand clasped over the left, I executed through them several rapid, sudden thrusts and rebounds into the spine at the region of the tender nerve at its outlet from the spine. This was quickly followed with a moment's thumb manipulations of the nerve involved and the immediate parts around to complete the adustment and freedom of the musculature and to still better cause the normal spinal approximation. I then had the patient get off the table, stand erect and take a long breath. He was soon saying, "That's easy.

How did you do it? I feel I could go back to work. The last attack I had like this two doctors worked over me about three weeks with medicines, hypodermics, mustard, ointments, liniments, strapping plasters, etc., and then said, 'guess you'll just have to wear out the pain, medicine don't reach it.'"

My findings gave me the clue, and the ready hand removed the cause. The "kink" or disturbance was vanquished, and the lately pinched and "crying" nerve, having restored liberty, laughed and joyed in its once more healthful, normal, silent, working way.

Colonia Building.

## A SATISFACTORY TECHNIC FOR THE ADMINISTRATION OF SALVARSAN AND NEOSALVARSAN.

H. SHERIDAN BAKETEL, A.M., M.D.

PROFESSOR OF PREVENTIVE MEDICINE AND HYGIENE IN THE LONG ISLAND COLLEGE HOSPITAL; ADJUNCT GENITO-URINARY SURGEON TO THE HOUSE OF RELIEF OF THE NEW YORK HOSPITAL AND TO THE POLHEMUS MEMORIAL CLINIC.

Brooklyn, N. Y.

The success of treatment with salvarsan and neosalvarsan depends to a very considerable extent upon the technic of administration. Syphilographers who have been careful to carry out a most complete technic and have given especial care to the minute details have had no reason to complain of after-effects. These products are powerful drugs and their injection into the system, unless properly done, is likely to be attended with reaction, as is the case in the most other drugs similarly given.

An experience covering nearly a thousand injections without reactions, other than at times a little nausea or headache, may presuppose the employment of a technic which is satisfactory. Two factors must be taken into consideration; one, the preparation of the patient, and the other, the preparation of the drug for administration. A reaction is extremely likely to follow the injection unless the patient's system is properly prepared for the reception of the salvarsan. The night before the injection the patient should be given a thorough catharsis, and should eat a light dinner. The physician should personally satisfy himself that the patient has had no food in his stomach for at least eight hours before the injection. These are two rocks upon which many a budding syphilographer wrecks his craft.

We are presupposing that the patient has first been carefully examined for any contraindications to the administration of an arsenical product. These include advanced cancer, Addison's disease, diseases of the circulatory organs and general organic conditions, in most instances including diseases of the kidney, although some cases suffering from renal disturbance have been given salvarsan without difficulty. Tuberculosis, which was formerly looked upon as a contraindication, cannot be so considered at this time, and pregnant women can also be injected if care is exercised. It is also necessary for the physician to satisfy himself that the patient has no idiosyncrasy against arsenic, and the urine should be carefully examined for contraindicatory signs.

The preparation of the salvarsan solution is of very great importance. In the first place, freshly distilled and sterilized water should be used. This does not mean distilled water purchased on the day of administration from a druggist, but the water should be distilled and sterilized on that very day to the knowledge of the physician and he should decline to employ any water more than twelve hours old. In one of the largest local hospitals some very serious reactions followed the use of distilled water which was between two and three days old. Saprophytes and pathogenic bacteria are likely to be found in old water and they naturally create disturbance.

Before making the solution, every instrument and utensil which will be utilized for the injection, including rubber tubing, should be boiled in distilled water and the salvarsan or neosalvarsan ampule should be immersed in 95% alcohol for twenty minutes, so that, if there be a minute crack in the glass which is not visible to the eye, its presence will be made manifest by the alcohol.

When salvarsan is used 50 cc. of sterilized, distilled water is run into a glass cylinder at room temperature and on the top of this water the salvarsan is slowly sprinkled so that the drug does not touch the walls of the cylinder more than necessary. By covering the surface of the water the product is more readily taken up and is less likely to form lumps. This solution is thoroughly agitated until a clear solution follows. Then the necessary amount of sodium hydroxide is added. This must be absolutely C.P. and must be prepared on the day it is to be used. If an older solution is employed it is very often impossible to get a clear solution. When there is complete turbidity, sodium hydroxide is added drop by drop until the product is entirely neutralized, as indicated by a clear solution. This solution is filtered into another cylinder and the necessary additional distilled water is added. A heavy dilution should be used, at least 20 cc. per decigram of salvarsan, and many patients need 40 cc. per decigram in order that no disturbance follow the injection.

One of the most important factors in this technic is the matter of filtering. Before the war it was possible to use sterilized absorbent cotton for filtering purposes, but difficulties have attended this method of late, and a well-known genito-urinary surgeon recently traced back some reactions following salvarsan to the use of an absorbent cotton which had been thoroughly sterilized.

Upon chemical analysis he discovered the presence of an acid which undoubtedly caused the reaction. Calcium-chloro-hypo-chlorite (CaCl O Cl), incorrectly called chloride of lime, and known by the trade name of bleaching salt of lime, is used in bleaching cotton. The chlorite present in the cotton was due to the chlorine contained as natural chlorites and probably to chloride of lime remaining in the cotton due to incomplete neutralization and washing in the process of preparation of the absorbent cotton. The acid present was undoubtedly due to the formation of either a little hydrochloric acid from the bleaching salt of lime by the action of sulphuric acid, by which the cotton is treated to neutralize the alkalinity of the bleaching lime, or to the presence of both hydrochloric and sulphuric acids.

Physicians who get reactions from salvarsan would do well to make a chemical analysis of their absorbent cotton.

By using heavy layers of thoroughly sterilized gauze all the difficulties which may follow the use of the absorbent cotton are obviated.

We have followed the ordinary gravity method with 2 cylinders, one containing the salvarsan and the other, sterile distilled water. The Morton three-way stopcock permits the operator to first introduce 15 cc. distilled water into the vein so as to prevent any possible infiltration by salvarsan. Then he can switch on to the salvarsan. After the entire amount of the drug has been injected, we again switch to the distilled water to make certain that, if there should be a leakage from

the vein, there will be a distilled water and not a salvarsan solution in the tissues. Pressure at the site of the injection made with sterilized gauze over the finger, followed by a little collodion applied directly to the needle hole prevents oozing and a possible infection.

Neosalvarsan has been injected by both the gravity and the syringe methods, and the latter has been found to be quicker and quite as satisfactory. In the preparation of neosalvarsan solution the same technic of boiling the apparatus is employed as is used with salvarsan. Instead of using a cylinder for mixing, a beaker is utilized. Into this is introduced 25 cc. of freshly distilled and sterilized water and the neosalvarsan is slowly sprinkled on the surface of the water. This readily goes into solution, and is at once drawn up into a 30cc. Luer syringe. Without any rubber tubing, the syringe is attached directly to a Fordyce needle which has first been introduced into the vein and the injection is made very slowly. Despite the fact that there has been no preliminary introduction of sterilized distilled water, we have yet to see any subsequent infiltration.

An article on the administration of salvarsan and neosalvarsan may seem elementary, but as it appears to be attended with more or less difficulty on the part of physicians who have recently adopted this method of treatment of syphilis, this technic is thus demonstrated in the hope that it may clear up some of the mooted points.

We would thus summarize:

1. Complete catharsis and an empty gastro-intestinal tract at the time of injection.
2. Water distilled and sterilized on the day of injection.
3. Freshly prepared C. P. sodium hydroxide and all instruments and utensils boiled in distilled water.
4. Sterilized gauze, instead of absorbent cotton, used for filtering.
5. Sterilization of the arm with ether or alcohol and sealing the site of needle entrance with collodion after the injection.

54 Sidney Place.

# The Diagnostic Laboratory

Conducted by CHESTER T. STONE, M. D.,
Brooklyn, N. Y.

**Diagnostic Value of Albumin in the Stomach Contents.**—H. Zoeppritz, *Milt, a. d. Grenzgeb, d. Med. u. Chir.*, 1915, *xxviii*, 777, reports that in 1904 Solomon published a report of his method of determining albumin in the stomach contents, and announced it as a method of distinguishing between ulcerative and non-ulcerative processes, the theory being that the serum secreted from the ulcers contained albumin.

Zoeppritz has examined 148 cases of stomach disease with a view to determining the value of the reaction. Of the series 61 were cases of carcinoma of the stomach, 29 were ulcers, 13 were cases of chronic gastritis, 10 of other stomach diseases, and 35 of different abdominal diseases in which the stomach was not involved. Diagnosis was confirmed by operation in 98 of the cases, and tables are given showing in detail the findings in these cases.

Zoeppritz concludes that the test does not furnish a differential diagnosis between ulcerative and non-ulcerative disease. If there is stagnation of the stomach contents albumin will collect over night, even if only a slight amount is produced, and if motility is normal or exaggerated it will be passed on into the intestine, even if a considerable amount is produced. Therefore a negative reaction has more value if there is stagnation, and a positive one more value if there is normal or increased motility. The secretory function of the stomach also has an effect on the albumin test. If there is free acid the albumin is soon changed into albumoses and peptones so that decreased acidity promotes a positive albumin reaction. Conclusions drawn from the albumin test are only valid, therefore, when the motor and secretory functions of the stomach are normal.

If it is a question of differential diagnosis between stomach cancer and chronic gastritis, positive albumin indicates cancer. A negative albumin reaction indicates that the cancer is not present. In a few cases albumin can be demonstrated in the normal stomach contents; it is somewhat more frequent in chronic disease of the stomach. In comparison with the other well-known tests for cancer of the stomach the albumin test ranks fourth; that is, blood can be demonstrated in 95 per cent. of cases, emaciation in 90 per cent., anacidity in 89 per cent., albumin in 83 per cent., lactic acid in 67 per cent., long bacilli in 64 per cent., and a palpable tumor in 64 per cent. The test is somewhat trying on the patient, especially if there is stagnation of the stomach contents; it is sometimes necessary to use as much as 20 liters of water before it comes out perfectly clear; this can hardly be done in very weak inviduais. Moreover, if there is the slightest lesion of the stomach wall the resultant bleeding will nullify the value of the test. (*Surg., Gyn. and Obst.*)

**Glycosuria and Diabetes in Surgical Diseases.**—Konjetzny and Weiland (*Mitt a. d. Grenzgeb, d. Med. u. Chir.*, 1915, *xxviii*, 860) find that in about 50 per cent. of fracture cases there is a spontaneous or alimentary glycosuria, which is transitory. Polydypsia and polyuria, the symptoms of diabetes, are not present, but there is hyperglycaemia. It is a transitory central lesion like sugar following puncture. It may be an anatomical injury, for instance from fat embolism, or a purely functional disturbance, or a combination of both. The glycosuria generally begins immediately after the injury or within a few days; it generally begins to decrease by the end of ten days, and by the end of fifteen or twenty days the condition has become normal again. There are cases, but they are very much rarer, of true traumatic diabetes, but they do not appear until much longer after the injury, about six months to a year, and are then persistent and accompanied by the other symptoms of diabetes.—(*Surg., Gyn. and Obst.*, Mar., '16.)

**Observation Upon the Elimination of Acetone and Diacetic Acid in Two Hundred and Fourteen Surgical Cases.**—Brander and Reimann in studying 214 consecutive surgical patients noticed that acetone was eliminated in a large percentage of cases—85 per cent. There was little reference to the objective condition of the patient, the severity of the pathology, or the gravity of the operation. The more emotional, frightened, or anxious individuals invariably were more shocked, and also showed more acetone. Diacetic acid was less frequently met with—in 17 per cent—and then only several days after the operation, and in women showing large outputs of acetone. No diacetic acid was found in men, while 38 per cent. of the women showed it. Ether was the anaesthetic in all but 4 cases.—(*Am. J. Med. Sci.*, C. L. 727).

**Changes in the Blood Caused by Radiotherapy.**—Treber reports (*Strahlentherap.*, 1915, vi. 398) the blood findings in 33 cases of carcinoma that he treated with mesothorium, the blood count being taken before

and after the irradiation. In 24 cases, or 73 per cent, the hemoglobin content increased 10 to 15 per cent, and in one case 20 per cent. In six cases, 18 per cent, there was no change in the hemoglobin content and in three extremely bad cases there was a decrease in hemoglobin. In all cases there was an increase in the number of erythrocytes. In contrast to this increase in red cells and hemoglobin there was a fall in leucocytes. In 22 patients, or 67 per cent, there was a decrease, and in 6, or 18 per cent, there was a fall from normal to less than 4800. The size of the dosage of mesothorium did not seem to have any special effect on the blood picture.

In roentgen treatment Treber found that the higher the dosage the greater the fall in leucocytes. He examined 10 patients, some of them carcinoma and some myoma cases. After about seven treatments there was a decrease in the leucocytes. There was also a rise in the red cells and hemoglobin, but there was probably a second factor involved in this: that is, the cessation of the hemorrhage as a result of the treatment.—(*Surg., Gyn. and Obst.*, Mar. '16).

**The Serodiagnosis of Gonnorrhea.**—M. Krotosvner decided to verify or refute contradictory statements upon the mooted points by trying out the test upon 127 individuals.

The tests were made by means of several polyvalent antigens. Krotoszyner thinks the most important drawback to the accuracy of the test lies in the difference in preparation and efficacy of the antigen. Another source of discrepancy in reactions may be looked for in the difference of preparing the antigen. In nine cases of his series examined with two antigens, the positive results were uniformly one plus higher with Hirschfelder's than with McNeil's antigen.

With regard to matrimony in connection with gonorrhea, the test may occasionally add confusion instead of enlightenment. In two candidates for matrimony, with a former history of gonorrhea and no clinical findings, the complement-fixation test was three plus positive and the author feels that some of the individuals must be considered chronic gonococci-carriers.

The test exhibits its greatest value in very frequent cases of chronic prostatitis on the basis of gonorrheal antecedents, and in these cases a positive reaction is, especially in connection with the marriage question, to be considered a strict indication to postponement of the step and to vigorous local and vaccine treatment. The best results were obtained in cases of from six months to three years standing. The author is convinced that the complement-fixation test for gonorrhea, if used and interpreted in connection with the clinical findings, furnishes a valuable aid to the diagnosis of latent gonorrhea.—(*Cal. S. J. Med.*, p. 451, 1916.)

**Demonstration That Spirochetes are Plants.**—Meirowsky reproduces sixty illustrations of spirochetes as published by different authors, all showing bunches in the course of the spirils or actual buds on a stem. Hübener and Reiter regarded these bunches as characteristic merely of the spirochete they recently found as the casual agent of Weil's disease, and hence they named their spirochete the spirochaeta nodosa. But Meirowsky declares that these are buds and that they demonstrated beyond question that spirochetes belong to the vegetable kingdom, as true lateral branches are never found on protozoa while they are characteristic of filamentous fungi. Meirowsky called attention in 1914 to these buds on spirochetes, but his findings were rejected or explained away by others. He insisted further that these buds were detached from the parent stem, correspond to Munch's granula with tubercle bacilli, and this seems now to be definitely established. The spirochetes of syphilis and of Weil's disease, and the bacilli of tuberculosis and leprosy all pass through a granular phase in the course of their existence. This explains the positive results obtained by Hübener and Reiter and also by the Japanese in infecting guinea-pigs with the filtered virus containing no spirochetes, confirming Neisser's and others' positive inoculation of monkeys with filtered syphilis virus. In the granular form the virus is able to pass through the filter. Be this as it may, the fact of the plant nature of the spirochetes now seems to be settled beyond question, he declares, as Koch, Metchnikoff and others have always maintained. —(*Jour. A. M. A.*, Jan. 20, 1917).

**Albuminous Urine.**—Does albuminous urine always indicate Bright's disease? Is Bright's disease, when present, always accompanied by albuminous urine? To both of the queries the answer is, No.

It is certain that some articles of food will cause some albumin in the urine. Osler and Bartholamow both assert that albumin in the urine is transitory, and cannot be a proof of Bright's disease, provided there are no casts to indicate advanced kidney involvement. Albumin is present in various diseases; and yet not preceding diseased kidneys. Albumin was found in a case of "mollitis ossium."

The excessive use of too exclusively albuminous diet, such as eggs, has shown albumin in the urine. Any serious interference with the circulation, such as congestion, will show albuminous urine. It was found that the inhalation of "arsenuated hydrogen and carbonic acid caused the urine to be albuminous. Albumin will be slight, and temporary, in exceptional cases, apart from dietetic errors. It is present in scarlet fever, typhiod fever, ague, diphtheria, pneumonia, peritonitis, traumatism, and acute articular rheumatism. It is also present in heart disease, abdominal tumors, cirrhosis, scurvy, pyemia, gangrene, and jaundice. Persons suffering from plumbism show it.

Finally, it must be carefully determined whether it is temporary, or persistent; or whether it is an evidence of renal disease.—(*Charlotte Med. Jour.*, Jan., '17).

**Blood Test.**—H. Couturier (*Med. Press*, July, 1916) advocates the following: Hematoxylin in water, 5 parts in 10,000; sodium hydroxid, 40.5; hydrogen peroxid, 12 volumes. Add to 5 c. c. of the sodium hydroxid solution, shake and add a drop of hematoxylin solution. Make the test in duplicate, using water or preferably the same excretion that is to be examined but known to be free from blood. A dark blue tinge develops in both tubes. Add 10 drops of hydrogen peroxid and compare. If blood is present, this color changes to violet red in 3 or 4 seconds, to light brown in 20 seconds, and to pale yellow in 40 seconds, the same changes occurring in the control, but only after several minutes. The hematoxylin solution must be freshly made. (Interesting but apparently not so good as other tests.—Ed.)—(*Buffalo Med. Jour.*, Jan. 1917).

**Effect of Salvarsan on the Blood Wassermann Reaction.**—John T. King, Jr. (*J. A. M. A.*) gives the quantitative effects of intensive salvarsan treatment in the different stages of syphilitic infection upon the Wassermann reaction in a series of twenty in various stages showed a reduction in the strength of the reaction from the use of salvarsan, the others showing no change. Even in cases not previously treated there was often little tendency for the reaction to be weakened by salvarsan, although such cases often showed pronounced clinical improvement. Only one instance of an increase in the intensity of the reaction was observed

to follow the administration of salvarsan. This increase appeared one hour after the administration, but the titre returned to the original level on the following day. This throws some doubt on the validity of the use of the so-called provocative dose of salvarsan, and the results recorded in the literature may have been due to faults in the Wassermann technic employed. No marked spontaneous changes in the intensity of the reaction were observed to occur over short periods of time.—(*Med. Standard*, Jan., 1917).

# Correspondence

## The Futility of Prohibition.

To the Editor of The MEDICAL TIMES:

In your editorial in the January issue, entitled "The Futility of Prohibition," you assume to discuss the futility of prohibition and wander from absurd comparison through misstatement to a discussion of the medical (toxic) value of alcohol, all of which is beside the question as stated in your editorial.

First. The most radical prohibitionist does not ask that people be compelled *to do* anything; nothing is to be forced on people; just forbid making and selling alcoholics as a beverage. All the difference in the world between forcing people to do something and not allowing them to sell something not essential, but harmful.

Second. We do not "know from past experience that where prohibition is enforced the people make their own spirits." I challenge you to name one well authenticated example in this country. We have never yet had prohibition enforced.

Third. As to "national system of government control as in England" the Premier of England says that alcohol is a greater menace to England than Germany and Austria combined and he demands prohibition, for the period of the war, at least.

Your sleep comparison is absurd, as you readily see, for you are talking about compelling people to do something that affects them personally, while the Prohibitionists are asking that people have not the right to manufacture alcoholics for sale for beverage purposes, a custom that affects the community, the State, the Nation. In the same issue is an authoritive review of the alcohol problem for 1916, by a scientist. It differs as much from your article as does reason and an inquiring mind from prejudice and egotistical self sufficiency. In the February issue, you take a sling at preachers and preacher's sons. You ought to know that a greater proportion of preachers' sons attain to positions of responsibility and eminence in the business and professional world than do the sons of any other class of men.

You evidently have not heard Billy Sunday, but in your rage against anything religious (Christian) you use isolated cases to argue to false conclusions. One can be religious, even a Christian, and be sane and intelligent, too, despite your imputation.

I am sorry to see the editorial columns of a scientific journal so prostituted.

Dare you publish this?

Very sincerely.

GRAFTON E. DAY.

P. S.—There are no preachers in our family.

Collingswood, N. J.

Humane considerations have almost determined us to adopt a new editorial policy in respect of prohibition. Our compassion and alarm have been excited by the violent reactions occasioned in the minds of prohibitionists by our editorials on the subject.

We might concede our friend Dr. Day's points to the effect that the people are not to be compelled to do anything, that the police power will not need to be invoked, that there is no intention of enforcing abstinence, that the present English system is not rational, and that prohibition has never actually been enforced anywhere, but we can never concede that there have been no preachers in Dr. Day's family. Dr. Day is himself an eloquent, coherent and genial preacher.—Ed.

## The Futility of Prohibition.

To the Editor of the MEDICAL TIMES:

Your editorial on the above topic sounds awfully flat, coming from a man of your caliber. Why did you not dwell on the delights given by the use of an "egg-nog" or a glass of Tom and Jerry these cold mornings? or the ecstacy of a mint julep in hot weather? In my last comment I suggested that the way to be happy was to count your blessings and let the other fellow tell his tale of woe.

"Sleep?" My, my, man! Don't you know that sleep never injured anyone? Rip Van Winkle is a notorious example of the non-injurious effect of sleep. Just why you fell into this ditch is unaccountable. Of course, you and other thinking men never advocate prohibition except for the other fellow. If a drunken fool should come into your sanctum and want to fight, you would say prohibition would fit his case. But do not worry over prohibition. The war against booze has been on ever since Solomon's day, and he did not find out that booze was a bad thing until after he was too old to withstand a "jag," and had he not mixed his drinks with women, possibly he would have gone down to his grave without mentioning the evils of strong drink. Let me remind you again to count your blessings and do not go "foolin' round" and "writin'" about prohibition and too much sleep?

Charleston, Mo. W. P. HOWLE, M. D.

## Birth Control.

To the Editor of the MEDICAL TIMES:

In your February number Dr. Branth presents a series of arguments against birth control which deserves careful review. While in the main the doctor betrays an angry tone, his letter is such as would be in keeping with conservative thought.

He says that the civilized human being is the only animal that grossly abuses the functions of sex, that the veterinarian does not meet with sexual disorders in the horse. Where would the gynecologist be, he asks, if the female sexual organs were not abused by unclean contact. It is an obvious fact that animals other than man are not controlled by a system of moral laws such as obtains among human beings—laws which are obsolete and have long outlived their usefulness. There is no driving necessity for sexual abuse (?) among the lower animals that know no restraint. Disorders of sex occur in the "civilized human being" not because of abuse of the sex organs primarily, as the doctor thinks, but because society—civilization—refuses to step in and remedy a situation which obviously requires change and which therefor is bringing so much unnecessary suffering.

"The creator made the sexual organs to perpetuate the species," but did not deny to us a certain pleasurable feeling which when properly exercised goes to make a better race of men. "Over 60 per cent. of the inmates of insane asylums are there because of onanism"—does the doctor present this figure as a scientific fact? If so, will he kindly submit his evidence? I think 10 per cent. would be a high figure. Is the doctor sure that sexual contact is not a necessity, and if so why do the "vesiculae seminales overflow"? Who said that the spermatozoa are reabsorbed? "Prisoners must live without it"—the doctor should emphasize the word must, and his argument is answered. "Many animals in captivity thrive; sexual function rests there"—and many more perish. If the spermatozoa collected in the vesiculae seminales are spent in overflow then it is reasonable to suppose that "the pure" are committing adultery in their hearts.

Morality should control births, we agree with the doctor, but we consider it morality, not "trickery," to emphasize quality in offspring rather than quantity, to allow parents so to control their sex feelings as to produce a limited number of children properly provided for, rather than to allow every spermatozoon to be accounted for and bring the added suffering of which we see so much. Birth control properly organized is the best way of preventing the sex abuse of which the doctor speaks so much.

The doctor's request for information regarding the remedies of the advocates needs no answer. They are too obvious.

"If some poor woman has too many children, make room for benevolence." Birth control is a more intelligent solution of the problem. Many great men in history have been born in large families, we agree with the doctor, but are they not exceptions? How about the countless number that might have become great if they had not been born of large families, and therefore deprived of the ordinary privileges of life?

"The operative birth control must have its origin in courts of law and not in the profession of medicine." The statement is somewhat vague, but the writer cannot mean that the court shall decide the indications for operative birth control. Is he willing to relinquish this privilege? The doctor fears "that we have been doing too much for the unfit, which, more or less, are an unthankful burden on the community." An excellent argument for birth control, doctor.

E. M. BLUESTONE, B. S., M. D.

New York.

# Society Proceedings

## Report on Health Insurance Laws.

A committee from the Society of Medical Jurisprudence has sent a report on this subject to the society and a resume is given herewith:

The subject of industrial insurance, or health insurance, or social insurance, or sickness insurance, as it has variously been designated, had its origin in Germany and other foreign countries because of the failure of fraternal organizations, lodges, benevolent associations, etc., to furnish adequate sick benefits when needed.

As much sickness among working people is an injury to the State, it was thought that the State should take hold of this matter and try and render better service to the people than had heretofore been rendered by the voluntary organizations.

The general plan of operation has been contributions to a fund by the government, the employer and the employee. Prinarily the purpose is to furnish the following benefits to the wage-worker:—sickness, disablement, maternity, medicines and sanitoriums. One of the serious factors in the proper development of the health insurance plans under the German and English system has been considerable controversy with the attending physicians. The reports show that the situation became so intense in Germany that the doctors went on a strike. In England a similar situation prevailed but under the recent act there has been some improvement in connection with the medical attendance.

It is reported that there are 18,000 panelled physicians in England to-day which practically covers nearly all the physicians. In some sections, 100 per cent. of the physicians are on the panel. The doctor is required to be simply a general practitioner of "ordinary" professional competence and skill, and he is called upon to give a patient only "ordinary" attention.

In the early part of 1914, the National Civic Federation appointed a Committee of three to go to England and examine the operation of the Insurance Act and prepare a report. The conclusion of the report is as follows: "The Committee has been strongly impressed with the factors and defects of these British experiments in social insurance. Except, perhaps, as to the unemployment insurance, selfish political motives have been obviously important factors in securing their enactment and shaping their details. They have certainly done much social harm and will inevitably do much more; and although on the other hand, they have done some particular good among the very poor, and, when the administrative machinery of the more recent of them is perfected, will undoubtedly do much more for the same class, yet, it is extremely doubtful whether the good for the nearly submerged can ever outbalance the harm to the other classes. Besides with the possible exception of the unemployment insurance, these insurance laws seem most expensive and inappropriate remedies for the social ills they were designed to alleviate not only because they are peculiarly defective in application to the masses of the very people who most suffer from those ills, but also because they are a burden upon the thrifty and higher paid class of wage-earners who might well be better off without their interferences, inquisition and taxation. Therefore, we should resist any spirit of impatience in America to copy these doubtful experiments, but should urge a policy of watchful waiting until their results become certain."

Your Committee has not found any decided interest by those persons who would be directly affected by the law, if enacted in this State or in this country. The subject seems to have been agitated primarily by an organization known as the American Association for Labor Legislation with which some eminent sociologists of this country are connected in an advisory capacity. In so far as the attitude of organized labor is concerned, it is opposed or indifferent to any compulsory health insurance laws.

At the annual convention of the American Federation of Labor held in Baltimore, November 15, 1916, a resolution was adopted that the Federation was opposed to compulsory health insurance.

Warren Stone, Grand Chief of the Brotherhood of Locomotive Engineers, says, "Instead of trying to bail a leaky boat, we should stop the leaks—begin at the other end and pay a living wage. The whole idea of the working man is to avoid paternalism."

James P. Holland, President of the New York State Federation of Labor, speaking of the attempts to get him to endorse the health insurance bill, recently introduced in the New York State Legislature and his refusal to do so, says, "Quite a number of our organizations have sickness and death benefits; some have sickness, death, funeral, out-of-work and tool benefits. We perfect our own insurance funds in the trade unions. If the employers paid enough wages the men could join their own funds and save in that way, to take care of themselves when sick. The laboring people also oppose this proposed health insurance law because it might break down the Workmen's Compensation Law. I do not know any laboring man who wants sick benefits from the State, especially if he has to pay for it."

So that some impression can be had of the actual benefits under the British system, your Committee finds that the maximum payments expressed in American terms are: Sickness—for men, for 26 weeks in 52, per week $2.43; for women, $1.83. Disablement for either men or women after 26 weeks of sickness, per week $1.22 Maternity—a lump sum, $7.29. These small payments tell at a glance much of the story of Great Britain's poverty. These figures contracted with a voluntary insurance as shown by the official report of the Amalgamated Association of Street and Electric Railway Employees of America, with 70,000 members states, that in 1915, 89 divisions (local unions) paid out in regular sick benefits $55,725. A sick benefit is usually $1.00 per day.

The International Typographical Union with 60,000 members, encourages printing office benefit funds. Those of New York pay $8 to $10 weekly.

The Brotherhood of Locomotive Engineers pays from an indigent fund up to $30 a month to disabled members. Its total for death payments for twelve years, 1904 to 1915, $18,417,293; for disability in the two years, 1904-1905, $1,951,750. From loyalty and indigent funds in 1915, $109,110.

The workmen going from a State having health insurance legislation to another not yet having it in play, would be left subject to the very ills sought to be cured by alleged failure of the voluntary system of insurance. Hence any State system of health insurance must be less satisfactory than one of National scope.

The Committee urges, however, that in advocating any system in America, it is of supreme importance that the benefits to the sick shall be the first consideration and not emoluments to any professional class.

In Germany where the income of the physicians has been lessened through the social insurance system the situation is so serious that boards of arbitration or conciliation are constantly called upon to settle controversies over medical fees and other collateral questions which require as great judicial effort as any capital and labor difficulty. When one observes the large savings bank deposits of the poor, especially in the State of New York, multiplied year after year into tremendous figures, it is an open question whether health insurance is very important at this time.

There are four factors affected by a plan of health insurance, the State, the employer, the employee and the physician. There has been considerable activity by employers in investigating the operation of the laws in foreign countries but no concerted movement whatever in urging legislation of this character. In so far as the position of the employee is concerned, it has only been in opposition. At the last session of the New York State Legislature some employers urged that a commission should be appointed by the Legislature to study the problem and make a report on the same plan as had been done prior to the enactment of the Workmen's Compensation Law. The position of organized labor and others of the working class to even this plan discouraged the Legislature in appointing a commission. There has been much discussion by physicians, particularly in the City of New York, but no plan in which the physicians generally are in accord has been adopted.

Under a preliminary investigation made by the United States Commission on Industrial Relations of nearly a million workers of representative establishments and occupations in this country, it was ascertained that an average of nine days a year sickness prevailed among those workers. It is not claimed that health insurance will cure all sickness, so that under any plan there will always be an average number of days of sickness among working people.

It is further claimed that factors that contribute to sickness is the occupational hazards of disease, irregularity of employment, unhealthful conditions of living, employment of married women in industries and the economic disadvantages as the result of low wages and insufficient annual income.

It is therefore urged that there should be co-operation between employers, employees and the public. That insurance is an efficient method of co-operation, the cost to be distributed among employers, employees and the public. Under the British National Act employers pay 3/9, employees 4/9 and the government 2/9 as the contribution of health insurance for males; the proportion differs slightly for females. In the German system of sickness insurance, employers ⅓, employees ⅔ and

(*Continued on p.* 24.)

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H. SHERIDAN BAKETEL, A.M., M.D.

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## Noblesse Oblige.

Politics are out of place in a medical journal. Medical politics are unpleasant enough, Heaven knows, but —"There are others."

"We have no desire to prolong the unsavory controversy on the subject of Dr. Grayson's proposed advancement, but, since it has become the common property of our daily press, a few words on the subject from the doctors may be permitted.

With the question of the candidate's professional fitness and his well-known amiable personality we have nothing to say, neither is it necessary to add a single word to the chorus of indignant protests from medical and line officers of the united services, although we sympathize deeply with them in their feeling that a rank injustice has been done to them, as well as incalculable injury to the *esprit de corps* of the Navy. The misguided, though "well meaning," gentleman who enjoys the power (and notoriety) never before thrust upon an otherwise obscure county editor, has only added one more to his long list of foolish acts. But—what about the "officer and gentleman" who has allowed himself to become a party to the questionable intrigue that seeks to elevate him so far above his fellows? Imagine the president of a board of managers of a hospital arbitrarily forcing a junior assistant in the out-door clinic to the position of surgeon-in-chief! The whole medical profession would rise in protest; every journal in the country would voice the general sentiment. Are we more sensitive than our brothers in the service? On the contrary, our sense of honor is not so keen, as shown by our own petty intrigues, yet no civilian would *dare* to accept such an unmerciful promotion, and few would *wish* to do so. Events move rapidly at Washington and before this goes to press we hope, for Dr. Grayson's sake, that he will himself have declined the honor, since his acceptance of it would seem to imply that be is not keenly alive to the high traditions of his corps.

H. C. C.

## The Denial of Maternity.

In our man-made world the sexual exploitation of women as breeding machines is one of the saddest of our records. Now we seem to be entering a phase of life and society in which men shall deny maternity to women. This is simply another kind of exploitation. Just as women were complaisant under the old system of exploitation, they promise to be complaisant under the new. With their wonderful powers of adaptation they enact either the part of motherhood worked to death, or of neuterism or quasi-neuterism. But one thing is lacking in the cruel program as yet, and that may be depended upon to come about—the group of *men* who bless and give ecclesiastical sanction to one kind of exploitation have not yet blessed and sanctioned the other kind in any large measure.

Of course the idea of controlling the population in this extreme manner originated with a man, and by men it has been developed. Now the women are falling in, as ever, with the man-made propaganda.

Because it is man-made it will be just as much overdone as was the old system, and will be equally abominable.

The few women pioneers merely reflected male philosophy. They were coadjutors.

Will the time ever come when we shall have a rational system, based upon what both sexes really need in the way of parenthood?

A reasonably high standard of living for all would insure families of reasonable size. The mere denial of maternity is a pitiful palliative and sexually and spiritually oppressive, while it leaves economic evils untouched.

## The French Birth Rate.

Wicksell, of the Swedish University of Lund, has shown that the birth rate in France represents the effect of economic laws. Not war, he says, but the high standard of living, is the determining factor in population. The wages paid for skilled or technical labor is what determines the standard of living. What the French have interpreted as German expansion, that is, the "invasion" of France by German workmen, has been due to the fact that as Germany had an excess of trained men their competition led to a cheapening of their labor, whereas in France, where there were fewer skilled workers, wages were high because those who were well trained could demand more. A country in the condition of Germany in this respect was ready to wage war, because of the economic competition.

Wicksell takes no stock in the old theory as to wars being the cause of biological degeneration, and points to Russia, with its high birth rate and many wars during the past two centuries. Russia is poor, hence the standard of living is low. Peaceful, prosperous and civilized New Zealand, Australia, Switzerland, Holland and Sweden have had high standards of living, hence a lowering birth rate.

Our own lowering birth rate bears a definite relation to our standard of living. The same is true of all countries revealing the same phenomenon. A high standard of living makes for good hygiene and sanitation, longevity and the salvation of children.

There has been no biological degeneration in France,

and she stands before the world tried by fire and blood and iron as never a nation was tried before, sound to her heart's core.

### Where Medical Journalism is An Art, and About One of the Artists.

In Philip Skrainka, lately literary editor of that excellent publication, the *Interstate Medical Journal,* of St. Louis, we discover a *littérateur* and an artist who is faithful to the tradition that the physician is possessed of a soul, and who in his editorial work reveals a vision and a style that are pabula indeed to the starved reader of conventional journals.

Think of it! Here is a man who writes for medical men upon the theory that they are interested in *all* the intellectual, spiritual and esthetic phases of medicine, and who has a genius for correlating these things with the technical side. He can make you see the relation of Masefield's poems to the practice of medicine. Somehow or other, he can show you that there is a close connection between George Moore's "The Brook Kerith" and a poliomyelitis epidemic. By some legerdemain upon which he possesses an exclusive patent he relates medicine to everything in the world that is beautiful or otherwise interesting.

This is a rare art, in medical journalism. It exists because it is needed. Medical men are something more than what one would infer from the pages of most journals, and it is to these real physicians, and not to the shadows on the subscription lists, that this master addresses himself so successfully.

The Skrainka school of journalism has our endorsement. The doctor's new journal, *Medicine and Surgery,* has our best wishes. In his tried hands it is assured of success.

### Operating Room Reform.

At last! In the *J. A. M. A.* of December 16, we note this statement by Dr. E. P. S. Miller of Chicago in commenting upon the lack of ventilation in operating rooms: "When you consider the amount of fresh air that is necessary to keep the carbon dioxid below the safety limit, it is strange that more patients do not succumb."

The operating room is really no place for a sick person, when one considers the carbon dioxid content, the depressing moist heat, and the lack of devices to keep the air in agitation, not to speak of the infectious possibilities of even the best regulated operating quarters.

When one thinks of it, however, there is something to be said against agitating the air in operating rooms, for would we not then waft trouble to the patient? And yet that is a modern principle of ventilation.

### Social and Biological Paradoxes.

Now comes a sociologist who finds that the children brought up by one parent (in cases where the other parent has died or where there has been a divorce) turn out better than children who have enjoyed the luxury of two parents. The sociologist seems inclined to ascribe this beneficent result to the elimination of fifty per cent. of parental unfitness. It would seem from this that parents in general are none too fit, and that it is safer to be brought up by one unfit parent than by two who are unfit. Such a philosophy would doubtless hold that neglect on the part of an unfit parent is better than such a parent's care, and that relatively neglected children develop capabilities and resources that might otherwise be stifled. A final conclusion ought to be that the total elimination of such parents would produce still better results. Better no parents at all than unfit ones.

But along comes Mr. Raymond Pearl, who has been studying alcoholized chickens at the Maine Agricultural Experiment Station, with the assertion that the progeny of such chickens are more tenacious of life than, and superior in weight and growth to, the broods of sober fowls.

Here, apparently, is an instance where unfit parents contribute fitness to their progeny.

We suspect, however, that the fact that these were Maine chickens must be taken into serious consideration. Stranger things happen in prohibition states than elsewhere, and the sociological student is confounded thereby.

### Standardized Souls.

Writing in the *Atlantic Monthly* about the General Education Board's support of the scheme to modernize completely the secondary and elementary schools which is about to be tried out at Teachers College of Columbia University, Mr. Alfred E. Stearns remarks: "Just now the strength of this pressure is greater than ever before. . . . backed as it is by . . . foundations . . . whose financial resources enable them almost to force upon the public the acceptance of the ideals they advocate."

These words might be applied with equal force to the health insurance movement. "There is a vast compelling force in millions."

"The fact cannot be ignored that many persons are disquieted by the intrusion of private foundations in the affairs of government, regardless of the philanthropic motives that actuate their managers." (The *Sun,* Jan. 23, 1917.)

A great medical society meets in New York City. An official letter is sent out soliciting funds to cover preliminary expenses. Then the letter says: "Larger amounts are to be secured by other means."

A new society is organized by gentlemen closely affiliated with a heavily endowed institute. Among the incentives for membership is "no dues."

The wheels of these resistless Juggernauts known as social or scientific or pedagogic reform movements or so-called standardizing influences are well greased by funds entrusted to oilers known commonly as accelerators.

It is pathetic to see medical men regarding these movements and influences, in so far as they affect them, as sincere and normal expressions of noble ideals and motives. Even after reading the names of the sponsors—when they are revealed—they do not reach for their gas masks and unlimber their Lewis guns. They discuss these movements simply and honestly with apparently no notion whatever that they are mice speaking merely by the sufferance of capitalistic lions. The movements go on.

There was once a time in the affairs of men when movements were spontaneous, or could be spontaneous. That time is no more. When you see one sweeping over the land nowaways you don't have to possess clairvoyant powers to see some nigger supplying the gasolene to the nice lads at the engine.

No longer can we be individualists, the captains of our own souls and the masters of our own fate. A cup is handed to us to drink in the brewing of which we had no part. Few seem able to put aside this cup, or withstand its effects.

The cup-bearers' leprosy is perfectly obvious, but we do not see it. Our diagnostic powers fail us here.

They have a phrase now which is significant—"The mobilization of democracy."

We are all gradually coming under this kind of materialistic conscription. It is a phase of the curse that flows from the colossal fortunes which we permit the few to amass.

What is behind the sinister forces that are subtly supplanting spiritual wholesomeness, and masquerading, by the way, as the latter in many cases?

The idea seems to be so to control human thought, in so far as the masses are concerned, as to make more secure and permanent the whole fabric of industrial, social and scientific feudalism, total enslavement under which is not fully consummated as yet.

Mobilization, alignment, democratization, socialization, Prussianization, slavery.

And some are persuaded that this soulless life will be worth living.

It will be, for the tyrants.

What ho! ye medical "masses," fall in. Yours not to wonder or reason why. Poison gas or incense, inhale all.

Now the lockstep, while over us cracks the whip.

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### Intuition and Stench.

We must permit our intuitions to guide us in many things medical. How often they lead us to a diagnosis of tuberculosis before the lesions are definitely staked out by careful examination. Intuition often tells us that a woman has uterine cancer before we have reasoned, or analyzed, or examined.

Intuition of this sort is not to be despised, if checked by exact data.

Incomplete and apparently meaningless data sometimes afford a basis for intuitive diagnosis which later is verified by further data elicited in conventional or unconventional ways.

Aside from this, we are compelled to rely upon intuition—we don't know what else to call it—in connection with practical matters in our daily work not directly related to technical details. Thus by intuition we frequently identify the dead beat, the psychasthenic, the nuerasthenic who doesn't want to get well, the hidden focus of infection, the luetic taint, the obstetric risk, the doomed pneumonia patient and the insane diathesis.

Yet we make light of this asset that is born of large experience and developed insight—that is, in speech. Yet each one of us applies this faculty constantly.

This application is something that cannot be taught to students, for it is a thing that must grow to maturity in the course of our professional lives. Therefore, it is not mentioned in the temples of our art, and it is not the fashion to exchange confidences about it, even among the matured men who utilize it daily.

Was there not something of intuition in our antecedent judgment of Friedmann and his tuberculosis remedy? It would be impossible to state any reasons in such circumstances, but we were right.

We are more often right than wrong in the matter of our intuitions, and modern thinkers are urging us to trust them more and to base action upon them, when action cannot be based upon anything else.

We have this feeling about certain of the birth control people. Some of them are obviously uncouth Tatars, preoccupied with obscenity and chafing under laws that say nay to their native atrociousness. It is because of the presence of such nuisances in our midst that restrictive laws have to be enacted and enforced. It is they themselves who stand in the way of rational practice. No great draught is made upon our intuitions so far as these anti-social ghouls are concerned, but others more subtle challenge our genius for identifying carrion.

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### The Ethics of Newspaper Medicine.

Since the press is to-day the greatest force shaping public opinion and actually educating the "man in the street," medicine must perforce help to make up its contribution to human thought and living. The newspapers of the day present ample evidence that such assistance is being given, and that newspaper men are expressing editorially and otherwise the best that medicine has to contribute, and expressing it better than medical men themselves, because of literary expertness and an exact understanding of the newspaper reader's psychology and assimilative powers.

But it is more especially with the manner and methods of the medical writer who addresses the public through this avenue that we wish to concern ourselves.

First, it may be stated that newspaper men are in agreement with us with respect to what our manner and methods should be. In so far as their own manner and methods of publishing medical *news* are concerned we must concede that their own professional judgment and taste must rule, though it is becoming customary to consult medical men on such points who are peculiarly fitted to advise.

Upon the treatment of current medical news there is nothing for us to say beyond what we have just said, though it would be gracious to add that upon the whole there is little of which we can properly complain.

Regarding formal medical articles contributed to the lay press, we think the following conditions should be observed.

It is best that such articles should be published in the magazine or literary section of the newspaper, or upon the editorial page. They may appear under or over the author's name, without any exploitative characterization of the writer as the "foremost medical writer," or of the contribution itself as "extraordinary," "brilliant," etc. It is proper to cite honorary professional positions held by the author, such as professorships. Nothing should be added to an article without the author's knowledge, and the subject matter must not be altered in substance. It is conceivable that the form might have to be altered in places. Nothing should appear in the body or title of the article that might be construed as a claim of special personal skill or knowledge on the part of the writer.

An important point has to do with the title of an article, and here there is room for honest difference of opinions. In general, it is best that a title should not border on the sensational. Here, however, we have to bear in mind that even in the medical press titles calculated to fix the reader's attention in a special manner are occasionally employed and are wholly defensible. It is conceivable that a good purpose might be served at times in the case of the lay press by the employment of a striking caption. If a title border on the sensational it must not do so in a manner calculated to jeopardize the dignity of the contribution or of the writer.

It is our conviction that the modern newspaper man is one with us in the belief that the observation of the conditions which we have named makes for the good of his own publication while it leaves inviolate our own traditions and ethical canons.

# Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

## A "Radical" Sex Discussion.

PLACE—A Second Avenue Café, Manhattan.
TIME—Evening.

At many small tables a heterogeneous assemblage is seated. An indifferent orchestra plays. An alleged dinner is served. There is a great buzz of expectant conversation. A highbrow is seen here and there. Loose-lipped, shifty-eyed men, with the stigmata of arteriosclerosis, although not aged, sit about. An ill-nourished female of uncertain age smokes cigarettes with assumed nonchalance. Most of the women are the man-shy kind. A few women are seen looking "like the concubines of Arab horse-thieves." In their vicinity there is a stifling odor of perfume not altogether obscuring the emanations of unclean bodies. Some normal men and women are present, inveigled by a transient curiosity of their own and by nondescript hosts of whom they have fallen foul in life's commingling. There are many brutish Tatars, masquerading as scions of a noble and cultured race. Whisperings and glances are directed toward a pudgy woman of the Tatar type who, it appears, is a neurotic agitator working along alleged anarchistic lines and living with a male agitator to whom she is not married. A magistrate of the Silk-Hat Harry type at the speakers' table leers alcoholically. A smug medical "publicist" is seen whose interest in sex grows out of his own unsolved problem—one of the kind bearing all the ear marks of Tartuffish lineage and nurture and properly destined for a parsonage in a Jersey village.

The unsolved personal problem is, of course, the reason why the crowd is present. They are people who are preoccupied with sex and like to talk and write about it interminably, which always makes the diagnosis of their disease easy. They are incapable of living the thing, or are afraid of it, or have defective consorts. To many of the women present it is most mysterious, but they recognize that there is dynamite in it and that their welfare hangs largely by it. The strange animal, man baffles them, but some of them do not want to be stupid. Grown women who are like that are usually hopeless cases, despite their good will. Some of the husbands are pleased with this defectiveness; other husbands would wish to get a glimmer of sexual gumption into the wives, or a substitute for the gumption. Some of the defective wives are proud of their defectiveness and make a virtue of their repressions—if they have enough life in them to base a repression upon. Emancipation wouldn't help most of these women a bit.

The silly people are gathered to listen to an address by a commonplace little man of the Tatar type whose "radicalism" is a measure of the seriousness of his personal problem. He is an ill-bred creature who cannot speak a hundred words without violating some canon of good taste or common decency. But we have explained why this is and the beast must be tolerated. Only the intense sex curiosity which this un-American and contraband citizen takes advantage of in his sexually hungry and maladjusted victims can account for the scene before us.

After some general remarks about the psychology of sex, by way of introduction, the speaker begins with a plea for masturbation. Its advantages are dwelt upon with unction and with emphasis. Not only is it not injurious but neglect to practise it accounts for many cases of apparently obscure ill-health.

Impotence is essentially injurious and must be sedulously avoided by all persons, for we cannot know who might be harmed by it. The only way to insure safety is to practise masturbation or intercourse, illicit or otherwise.

The speaker nowhere takes account of social or moral injury to other human beings, as a result of free sexual life. That is always beside the point.

Marriage is a totally useless institution.

Society should sanction the living together of our young people.

Promiscuity, polygamy, polandry—these should be permissible in the cases of persons so disposed.

There are in the community certain persons—estimated at about two per cent. of the population—who are homosexual. These should be given a high and honored place in society. They are usually the best people, contrary to the common notion that most of this class are degenerates.

We should live our lives sexually after the manner of Casanova. No venereal penalties need be paid if certain prophylactic measures be employed.

The speaker weeps hysterically when recounting the miseries due to failure to observe the principles of birth control. An impassioned plea for an increased resort to abortion is made, and the civil and medical authorities and Holy Church are severely castigated for their uncompromising stand against such practice. Abortion should be legalized and widely invoked.

The prostitute should be raised to a respected place as an indispensable servant of democracy, and should be pensioned at the end of an honorable and honored career.

If we were sexually enlightened so-called pornographic literature and "art" could be widely circulated without harm resulting. As a matter of fact, there is no pornographic literature or art save in the obscene minds of the purity advocates.

The so-called perversions are not perversions, so far as those who practise them are concerned, but represent normal sexual expression consonant with newer conceptions of morality, merely widening the range of the libido in action. There would be fewer neuroses if the perversions were more widely and intensively practised, for there would then be a reduction of repressed and unfulfilled wishes, admittedly the chief factors in initiating the neuroses.

Well, after the foregoing yawp by the repulsive little Tatar, there is a general discussion. The medical "publicist" starts the orgy of talk. It is a great relief to listen to him after the Tatar. His views are not what could be called liberal, sexually speaking, but he is tolerated by the crowd because of his economic and religious attitudes, which are liberal. His compromise with sex comes both from his hereditary and environmental limitations. Even his irreligious outpourings do not lessen the impression of essential respectability.

The other speakers express the views of the Tatar, modified simply by passage through the prisms of their curious personalities. Bad taste and mental commonplaceness characterize them all.

Sheepish adjournment at midnight and the resumption of their preoccupation.

Cursed and obsessed, they go forth into the living world, yet are they themselves dead and not living like other men.

Their prayerful song is not heard by Eros: "O my dove, that art in the clefts of the rock, in the secret places of the stairs, let me see thy countenance, let me hear thy voice."

# The American Association of Clinical Research

JAMES KRAUSS, M. D., Permanent Secretary and Editor.

## CLINICAL OBSERVATIONS—CANCER RESEARCH.*

H. W. NOWELL, M. D.,
Boston, Mass.

Three years have elapsed since I first made a report of my research work upon the etiological factor of carcinoma. At that time the investigation had been under way for more than a year, and in this report I gave the procedure for isolation of the material which formed the basis for all future work.

Experimental study of immunity was made upon animals, rabbits being chiefly used. First considered was the general and specific toxicity of this substance; next, the control experiments; third, immunization; fourth, anti-toxic action, and, fifth, specific toxicity. It was definitely shown that carcinoma could be produced in the animal when given a certain dosage of the substance isolated from carcinomatous material. The formula I will repeat in this paper so that you may once again have an idea of what this substance may be.

From cases of operable tumor, when a diagnosis of carcinoma had been positively established both by clinical and microscopical findings, the freshly extirpated growth was carefully freed from the fat and extraneous tissue adhering to it. Experience showed that tumors of small size and those in which the degenerative changes incident to "breaking down" were least manifest, were best suited to the purpose. This fact is in accord with the outlined theory, as the toxic substances should be present in largest amount in those cells exhibiting the maximum of activity, namely, those in the tumors showing the most vigorous growth. The tumor substance was then cut into very fine pieces, using a clean bowl and knife, the resulting mass placed in a clean vessel, preferably of porcelain, and extracted with water at the boiling temperature for three hours. Deep vessels of Berlin porcelain were found to be desirable for this purpose. The mass was then filtered to remove the exhausted residues, the clear filtrate containing those portions of the tumor which were soluble in water. This filtrate was rendered slightly acid with sulphuric acid of the highest purity, and again boiled to coagulate the soluble protein substances, the coagulum then being removed by a second filtration. The slightly acid, aqueous filtrate was next exactly neutralized with barium hydroxide solution. (As an indicator phenophthalein was used; and to avoid contamination of the solution the end point reactions were carried out on porcelain plate.) The barium sulphate precipitate was next completely removed by filtration. (If the neutralization takes place in a solution heated nearly to the boiling point, the tendency is for the barium sulphate to precipitate in the crystalline form. Under these conditions it filters out far more clearly than can be attained by a cold precipitation. Under the most favorable conditions it is the most unsatisfactory inorganic substance which we are called upon to remove from a solution, inasmuch as it betrays a tendency to assume the colloidal form, and under these conditions separates slowly and imperfectly.)

The exactly neutral barium-sulphate-free, aqueous solution was next concentrated, the resulting syrup-like substance extracted with absolute alcohol in liberal proportion, and the alcoholic extract filtered from the insoluble residue. This completes the separation of the protein materials, all of which are completely insoluble in alcohol. The alcoholic extract was freed from the solvent by evaporation. The residue from the alcoholic extraction was next thoroughly extracted with ether. This ethereal extract should contain all of the fat, and be rejected.

The residue insoluble in ether was now dissolved in water, and the solution rendered strongly acid with phosphoric acid. For this purpose the aqueous solution of ortho-phosphoric acid is probably best suited, as this is thoroughly hydrated and consequently exercises no dehydrating action.

The acid aqueous solution was now extracted with ether and the ethereal extracts saved, while the aqueous residues were rejected. The ethereal extract was removed by distillation and the residue again dissolved in water. To this aqueous solution, which is acid in reaction, an excess of very pure zinc oxide or zinc carbonate was then added, and the whole mass boiled for at least thirty minutes. Removing the undissolved zinc oxide by filtration and discarding it, the clear alkaline, aqueous solution was then allowed to evaporate spontaneously. Under these conditions the crystals gradually formed, and were readily removed from the solution. The crystals were purified by successive recrystallizations from water, and these in their final purified form were the basis of the subsequent investigations.

At the same time that the injections were made upon the experimental animals, sterile salt solution was injected under precisely the same conditions into control animals. In this group all of the animals received the same amount of the material, and as a result of this, tissues were taken from these animals at a later date and prepared for microscopic examination. Having shown that this substance does have a specific action in carcinomatous conditions I felt justified in taking up a series of human cases. It seemed to me that it would be possible to immunize against these conditions the same as to immunize against any other disease, whether it were as a result of chemical change or the result of toxins from infectious bacteria. In this instance it was a chemical substance used; therefore it must result in immunity against chemical changes in the body producing this disease, so three classes of cases were treated as follows: Class I, patients treated immediately following recovery from operation for radical removal of carcinoma, they receiving ten consecutive treatments hypodermatically, at five-day intervals. Class II, patients who had been operated upon and had had a recurrence, they receiving treatments for a considerable length of time, the number varying with the different patients. Class III, primary inoperable cases, treated same as Class II.

The cases treated in the three classes were not selected but were taken for treatment as they were sent by the different physicians. The results were as follows: Out of 257 cases 30 were operable. Of these 30 clinically there were 29 where there was a complete removal of carcinomatous tissue. These were treated prophylactically with the biochemical substance. Three out of this 29 have died; one lived two years; one lived for one year and eight months and one three months.

* Read before the eighth annual meeting of the American Association of Clinical Research at New York, on September 29, 1916.

There has been one slight recurrence at the end of two years and eleven months. This patient is in good condition at the time of writing, and is receiving some additional treatment. One case missing, but showed no sign of recurrence at the end of two years. Twenty-five out of thirty remain in good health; time varying from two to three years. This shows 86.2 per cent. living, of which 82.7 per cent. are clinically cured. The one missing I have every reason to believe should come under the clinically cured.

You will note that this is an exceedingly large percentage in comparison with any other treatment ever offered to the medical world, especially when we take into consideration the time allowed before making this report. Previous reports showed 20 to 25 per cent. of clinical cure, with one exception; 50 per cent. was claimed following surgery alone.

These statistics should interest the surgeon and physician, for with this treatment added to the surgery, recurrence may be prevented. It should be but a short time, if the family physician makes plain to the patient that there is something to be administered immediately following surgery, before all those showing suspicious signs of malignancy would consent to operation in the earliest stage of the disease. This would be the first great step toward the elimination of the horrors of recurrence, which is bound to take place in a very large percentage of cases.

In these cases reported under Class I, ten prophylactic treatments were administered, each case receiving .004 mg. at each treatment of the biochemical substance isolated from carcinomatous tissue. The remaining 219 cases were included in Classes II and III. In these cases came the great question of bodily resistance, and each individual case presented a problem.

The first change to be noticed is an improvement in general health. This means that the resistance of the body is being raised, which must take place before any change can be observed in the local area of the disease, and this improvement must continue for more than a day or two, as a temporary improvement often results from any new treatment being used, due to psychic action. In these cases that I have reported I have waited three years and more, so that we cannot lay the results to any psychological effects.

Following the initial dose one must be observant as to whether the patient is showing any unusual disturbance which might be laid to the physiological action of the material used. This, if it is to occur at all, always follows within a very few hours after administration; notably, slight chilliness, accelerated pulse, sometimes nausea followed by diarrhoea. I mighty say that these symptoms are extremely rare and have not been observed in more than 2 per cent. of the cases.

It requires in some cases several treatments before any marked change, even in the general condition of the patient, has been observed. The intervals between doses depend upon whether there is any physiological action; ordinarily the toxin is given every second day during the first series of treatment. After that it depends entirely upon the amount of tissue involved and the general condition of the patient. The object, from beginning to end, is to create a process of immunity within the diseased body. If the involvement is so great that the toxins given off are in greater proportion than the power of the body to neutralize these toxins there can be no material benefit received from the use of this substance. Hence the importance of beginning treatment in the very earliest stage of the disease or immediately following operative procedure.

In Classes II and III, 15.4 per cent. improved for more than six months; 1.7 per cent. remained improved at the end of three years. In these cases antibodies must have been produced in sufficient numbers to overcome the toxic action upon the nerve centers, thus keeping the resistance of the body at its highest point. Whether these antibodies were produced within the body as the result of stimulation or whether they were introduced is a question not yet satisfactorily explained. All of these cases were advanced and inoperable. The question arises whether in such cases the administration of this biochemical substance has a passive action in bringing about the protection or whether this resistance is active.

In this series of cases herein reported, conditions were treated in all parts of the body. From the statistical standpoint it will be interesting to note that 53.3 per cent. were female breast cases; 23.3 per cent. genito-urinary cases; 13.3 per cent. gastro-intestinal; 6.6 per cent. head cases, and 3.3 per cent. lymphatic glands.

All of the breast cases received for treatment had been previously positively diagnosed as being malignant and of the carcinomatous type. Many cases referred to me as being malignant proved to be chronic mastitis, showing that the relationship between chronic mastitis and malignancy should be studied more carefully by surgeons and pathologists. Had I accepted these cases as malignant and treated them accordingly, my percentage would have been materially increased.

MacCarty and Mensing, taking up the comparative pathology of carcinoma of the breast and chronic mastitis, say that practically one in every five patients with pathologic breasts may be saved from radical operation if the surgeon is accompanied in his work by a competent surgical pathologist.

In many of these recurrent conditions it was found that the necrotic process started at angles of scars where there had been considerable stretching and constant pressure upon the skin surfaces, acting almost the same as constant irritation. Associated with this in many cases marked oedema of the arm, with pressure pain. There are several of these cases at the end of three years with normal arm and formation of new tissue over site of recurrence. While perhaps not clinically cured, there is no apparent disturbance, but a marked improvement in the whole condition of the patient. It must be remembered that in addition to the patient's receiving the biochemical substance there was a carefully directed local treatment.

In the genito-urinary cases there is to be found in almost every instance a secondary infection, and this must be taken into consideration. It is only by constant care, with local applications as far as possible, that this secondary infection can be held in check, and at times it is quite necessary that autogenous vaccines be used in association with the biochemical substance. Many of these cases remained improved for a considerable length of time, and in the so-called inoperable cases there are several at the present time that have apparently recovered.

The gastro-intestinal cases have been slow to respond, except perhaps those of the large intestine. In these cases I have had some most remarkable results, especially where the ascending colon is the seat of trouble and the region of the sigmoid. One of the most noticeable clinical changes observed in the gastro-intestinal cases is toxemia as the result of stasis. This, however, can be overcome to a certain degree by a careful diet.

(*Continued on p. 22.*)

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may be used successfully in overcoming difficulties of this nature without lessening the amount of available nutrition. Details of the method of procedure will be sent to physicians, upon request.

**Mellin's Food Company, Boston, Mass.**

(*Continued from p. 88.*)

Here again secondary infection plays an important role, especially where the tissue becomes necrotic and breaks down in the intestinal tract. Autogenous vaccine may be considered in these cases also.

Lymphatic conditions have responded to the treatment extremely well, but in nearly all of the cases the primary site is questionable.

The head cases have been most unsatisfactory, owing to the fact that there is so much glandular involvement that it is almost impossible to raise the resistance to a point of immunity. Here again the worst of all conditions to contend with is the secondary infection owing to the head cavities being exposed to all sorts of outside infection.

The longer one works upon and studies malignant disease, the greater becomes the realization of the vast field which must be explored before the end point can be reached. So I may repeat, that with the knowledge gained from this experimental research we have added to our armamentarium a valuable treatment for the prevention of cancer. Statistics show us that in 1915 there were eighty thousand deaths from cancer in the United States. This alone should lead to the co-operation of every physician to further this work of prophylaxis.

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### Health Insurance.

There is now before the State Legislature a bill, introduced by Senator Ogden L. Mills, which should receive the earnest consideration of every citizen. It is a measure providing compensation for losses due to sickness to all manual workers and all others earning less than $100 a month. The compensation covers any sickness or accident not within the scope of the workmen's compensation law. The benefits conferred under Senator Mills's plan would include medical, surgical and nursing attendance and the necessary supplies for as long as twenty-six weeks in some instances; there is a maternity benefit and a limited funeral benefit. The State would pay one-fifth of the cost of this health insurance; employers would pay two-fifths and workers two-fifths. Local mutual health funds under joint control of workers and employers would be established.

Dr. Haven Emerson, Health Commissioner of New York, favors the bill; the medical profession is divided, but the Society of Medical Jurisprudence has decided against any measure of the sort at present, at any rate; organized labor is almost unanimously opposed. This opposition was expressed recently in a paper by Samuel Gompers read before the National Civic Federation, which went on record afterward as against such legislation. The American Association for Labor Legislation has been described as the active force in favor of State health insurance.

The scheme is frankly paternalistic. Does the average citizen want the Government to guard his uprisings and downsittings? Does he want compulsory physical examinations? Does he want State and employer to follow him into his home?

Mr. Gompers's assertion that "social insurance cannot remove or prevent poverty" may be dismissed as beside the point; the abolition of poverty is not the end in view, the amelioration of acute distress is. But we cannot so readily dismiss the assertion made by other students of the subject that health insurance laws have proved largely a failure both in Germany and in England.

(*Continued on p. 24.*)

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(*Continued from p. 22.*)

The essence of the problem will be found in the extent to which health and accident insurance breeds carelessness and shirking and dependence among workers. Perhaps to a negligible extent, though it would have to be a very small extent indeed to be negligible where such weaknesses are involved. The check on individual initiative such laws would impose is less readily perceived, but lies latent in them. There is in all the world no spur like uncertainty of the future. To guard himself and his own against disaster many a man has been forced to think, to plan, to study, to scrimp and save, to use his brain as well as his hands as nothing but the hint or presence of adversity could have brought him to do. The struggle was the making of him; he did not know his powers until he was forced to use them and develop them.

Under a system of social insurance will the sleeper awake?—(New York *Sun*, January 25, 1917.)

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(*Continued from p. 82.*)

the government bears the expense of governmental supervision.

Without an efficient medical staff related to the state health agencies the system of health insurance will fail of its best results. Care must be taken to make it not merely a relief measure. Medical appliances of the health department would have to be greatly enlarged or strengthened. Medical officers would have to be subject to the regulations of the Health Insurance Commission.

In Germany it is claimed that insurance has been a stimulus to the entire health movement in the nation. The "sickness insurance" has stimulated and financially aided dispensaries and hospitals for consumptives, dispensaries and clinics for infants, first aid societies, school doctors, day nurseries and care rooms for children, holiday colonies, peoples kitchens, milk depots and agencies for combatting alcoholism. It has, however, been found that as the Act has continued, the average days of illness during the year has increased. For example, in Germany the average number of days of sickness per insured member per annum were 5.89 days in 1885 and 8.49 days in 1912. It is claimed that this is not the result of malingering, but because the laws have been changed extending the duration of the benefit from 13 to 26 weeks.

It has been found also that in establishments in this country where the employers have managed the funds and where the employees have contributed, there has been considerable malingering as a justifiable method of "getting back" what they put in. It is claimed that malingering might be reduced to a minimum by well directed provisions for its prevention. That under a system of where employers, employees and government contribute, it is the interest and advantage of all to prevent it. That a system of medical referees such as made possible under the new British Insurance Act removes responsibility for signing disability service from the family physician and places it in the hands of a disinterested medical officer of the government. It is also claimed that as the weekly cash benefit is materially less than the weekly wages that would also help. It is also maintained that health insurance should be governmental rather than a private insurance.

The present plan is to insure all persons earning up to and including $100 a month. It is estimated that a contribution of approximately 50 cents a week per insured person, 25 cents to be paid by employee, 20 cents by employer and 5 cents by the government would enable the insured person to receive $7.00 a week when disabled on account of sickness for as long as 26 weeks in one year, adequate medical and surgical care during disability, medical and surgical care of wife of insured person during confinement and a death benefit of $100.

It is claimed that budgetary studies of large numbers of working men's families pay as high as 90 cents a week and receive a little more than actual funeral expenses.

Those who oppose this law maintain that it is paternalistic legislation and that American institutions and American ideals are not in harmony with this method of uplift by force. That local health insurance societies will become labor unions and if they are approved by the state, the employer must join every insurance association any of his employees join. That labor unions would never consent that the employer deduct from the wages paid any employee the share of that employee in the contribution which shall be in proportion to his wages. That there is no provision for any physical examination for the insured and that the plan takes no notice of the physical condition of the employee or of his fitness under ordinary insurance standards to entitle him to insurance; that this would have a tendency to employ only the physically fit and would in a measure throw out of employment a great many now employed who are physically unfit, which would result in a permanent pauper class. That the law would create commissions with high salaries and a host of salaried officers. That it would impose upon business and industry a very serious burden. That in New York State the Workmen's Compensation Law already places the manufacturers of New York under a disadvantage because the rates of premiums and the benefits are higher than in adjoining states.

That it would create trouble immediately as to whether all the taxpayers or only industrial employers should join in the fund; some administration will be most generous to the working people especially if employers have to pay all the bills. Where the working men must pay the bulk of the cost, they will bitterly object to state management and will insist on managing the funds themselves. That under compulsory social insurance the right to manage the funds is a cause of everlasting strife. That all who contribute to the funds should have a right to proportionate representation in the management. That public officers in these days are for popularity and not justice and that such a fund could be used constantly for the purpose of advancing the candidacy of this or that officer, who will be using his office to advance his personal interest with other people's money.

The physicians also demand that they have a representation on the State Commission.

Your Committee has considered this subject rather from the viewpoint of the general good or injury to the working people of the entire country and not from any particular angle of the interest of the employer, employee or of the physician. Much study has been given to the operation of the laws in foreign countries and up to the present time it is not yet settled whether social insurance has really been of benefit or injury to the State as a whole. Your Committee has also considered the application of these foreign laws to the heterogenous and roving population of this country, the character of the government, the liberty of the individual, etc., and presents for the consideration of the Society the following conclusions:

1st.—The time is not ripe for the enactment of health insurance laws in this country.

2nd. Should it be considered desirable in the future to enact health insurance legislation, then it should be a National law and not a State law so as to affect all the people of the country in the same way.

3rd. That in the enactment of any law, be it state or national, it shall neither be only compulsory or only voluntary, but a law that will combine the advantages of both compulsory and voluntary insurance.

4th. That the annual compensation of those included under the act, whether state or national, shall not exceed $800 per annum.

ALFRED E. QUINN, *Chairman.*
GEORGE W. JACOBY, M. D.
GEORGE DOW SCOTT, M. D.
JOHN V. BOUVIER, JR.
*Committee.*

Albert S. Bard, fifth member of the Committee, concurs in the main conclusion that the time is not yet ripe for the inauguration of a health insurance system in this State, but does not sign the report.

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## Symposium on Cancer.

At the recent meeting of the American Association for the Advancement of Science a symposium on cancer was an important feature.

Although radium has produced very important palliative results in advanced cases of cancer, and has even, in a considerable number of cases, apparently caused a complete disappearance of the disease, yet it cannot be relied upon to effect a permanent cure in the late stages of inoperable tumors, and, therefore, the importance of early diagnosis of cancer is again emphasized. Such is the essential message on the present status of the radium treatment, according to Dr. James Ewing, of Cornell University. Dr. Ewing spoke from his experience with the radium treatment of cancer at the Memorial Hospital, where he is Director of Cancer Research. According to the speaker the use of radium in cancer has, within the last ten years, established itself as an excellent method of dealing with benign and malignant tumors of the skin, which, when properly applied, it usually removes promptly and with remarkably

(*Continued on p. 26.*)

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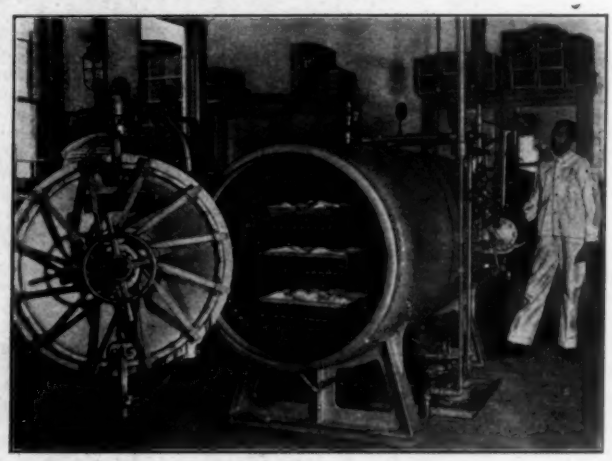

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(*Continued from p. 24.*)

little scarring. In the major types of cancer of the accessible mucous membranes radium has also achieved considerable success. It has been chiefly tested in uterine cancer, in which disease it has accomplished radical improvement of many inoperable cases and several apparently complete cures, as attested by post-mortem examination after the patients had died from other causes. A number of foreign surgeons state that their results are better than with surgery, and they employ radium in both operable and inoperable uterine cases. The leading American surgeons who are using radium obtain equally good results, but take the opposite position, that they prefer to operate in suitable cases.

Much the same situation exists in regard to many other forms of accessible cancer, while a few authorities even report apparent success with such difficult cases as those of the lip, tongue, rectum, etc. "It has become apparent," said Dr. Ewing, "that success depends very largely upon the skill and accuracy of application, upon a knowledge of the anatomical character of the particular tumors treated, and, above all, upon attacking the disease before it is too far advanced."

Referring to the limitations of radium therapy as "numerous and formidable," Dr. Ewing pointed out that "the supply of this metal is small and generally restricted to a few institutions. The requisite skill to apply it safely and effectively and to choose suitable cases is still more restricted. Beginners often do more harm than good, and it is easy to discredit the agent entirely. The methods are badly in need of standardization. Under-dosage may destroy superficial tumor cells only and leave the deeper ones to grow in the inflamed tissues. Overdosage causes the destruction of normal or diseased tissues, resulting in fistulas, hemorrhage, and severe infection. With repeated doses tumor cells appear to become less and normal tissues more susceptible. Excessive scarring often rtsults and prolonged exposure to large amounts often causes a peculiar and severe form of general intoxication. Several workers have had fatal results from their attempts to cure advanced cases. Finally, radium has only a local effect, extending at most to a depth of six to ten centimetres, and if it has any constitutional influence this cannot be relied upon to deal with extensive local or generalized cancer. Under these circumstances a general recommendation to the public to resort to radium for all types and stages of cancer is decidedly inadvisable."

With reference to the future of radium, Dr. Ewing did not venture a forecast, but pointed out that very great significance must be attached to its selective action on many kinds of tumor tissue. In spite of rapid improvement in the technique of application, the speaker believed that, on the whole, the methods are still comparatively crude, although he had little doubt that exact dosage and accurate adjustment of the apparatus can be worked out to a much greater degree than is now accomplished. "For inoperable cases," Dr. Ewing said in conclusion, "the value of radium, although great, is, perhaps, already overestimated. To what extent it may establish itself in the treatment of operable cases it remains for the future to decide."

Dr. Joseph C. Bloodgood, of Johns Hopkins University, spoke from the surgeon's point of view on cancer in the human being, dwelling especially upon the importance of the pre-existing lesions which may develop into cancer, and in the treatment and removal of which lies the chief opportunity of preventing this disease. Dr. Bloodgood made it clear that cancer in its early stages is easily cured. "The disease," he said, "usually springs from a pre-existing lesion allowed to go unattended. Chronic irritation of a sore may also contribute. In external cancer the warning is visible or can be felt. Unfortunately, pain is rarely present. A mole or a wart, a small area covered with a scab, a small lump or nodule beneath the skin, an unhealed wound—all of these may indicate potential cancer. The appearance of these defects should mean a call upon the physician for examination as to the probability of incipient cancer. Nothing is lost by taking the precaution if symptoms are not found, and, on the other hand, the risk is too great to allow the warnings to go unheeded. The question in this case is decided by the physician, and in many cases a minor operation removes a probable cause of the disease."

"No man ever yet had a cancer on the lip or tongue without first experiencing some warning," continued the speaker. "The defect may be a burn from continued smoking or an irritation from ragged teeth. The probabilities of a cure are excellent when men heed such signals of possible danger and are treated at once. Tobacco users are more subject to cancer than those who do not use it. There is no means of preventing cancer

(*Continued on p. 28.*)

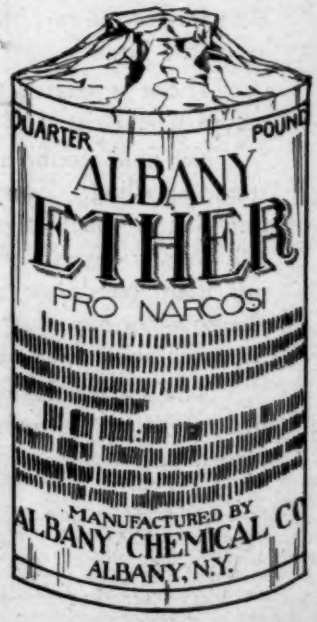

# The New Anaesthetic Ether

It is a well-known fact that the Pharmacopeias of Great Britain, France, Germany and Russia require a much purer and more efficient ether for surgical and medicinal use than the U. S. P. By a notable advance in the manufacturing process, a product superior to even that of European countries is now attainable by physicians and surgeons of the United States.

## Albany Ether Pro Narcosi

is the result of the new process. The most prominent characteristics of this product is the total absence of Vinyl Alcohol and Aldehyde; a specific gravity of .710 at 25 degrees C. or .720 at 15 degrees C. establishes the absence of water and alcohol. The test for acidity complies fully with the requirements of all published Pharmacopeias. A chemical or clinical test of Albany Ether is invited.

(*A liberal sample for this purpose will be mailed on request.*)

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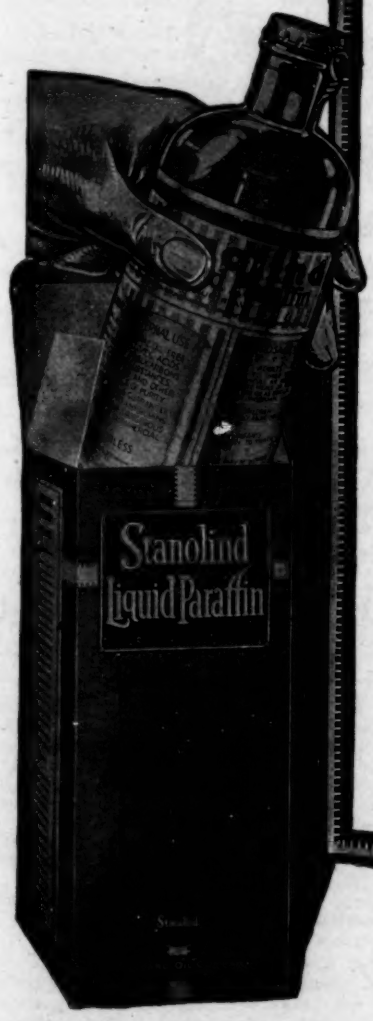


# Before Operation

Stanolind Liquid Paraffin is an ideal laxative for surgical practice.

When used in the proper dose, it thoroughly empties the alimentary canal, without producing irritation or other undesirable effects.

It is particularly valuable in intestinal surgery, because it leaves the stomach and bowels in a quiet state, and because its use is not followed by an increased tendency to constipation.

After an abdominal operation, one or two ounces of Stanolind Liquid Paraffin may be given through a tube while the patient is still under the anaesthetic, or as an emulsion, an hour or two later.

Stanolind Liquid Paraffin is essentially *bland* in its action, causing a minimum amount of irritation while in stomach or intestine. It may also in most cases be gradually reduced without apparently affecting the frequency of the evacuations.

A trial quantity with informative booklet will be sent on request.

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**Port Chester, New York**


(*Continued from p. 26.*)

of the breast; the appearance of a lump or a discharge from the nipple being the first sign, but when such lumps are at once removed on their discovery, half will be found benign—that is, not cancerous. The removal of benign lumps undoubtedly prevents cancer in many cases, since modern medicine clearly recognizes the danger of benign lumps turning into malignant disease of the breast. The chances of permanent recovery in true breast cancer vary with the exact type of the disease, but are excellent if it is recognized early and completely removed. The chance of recovery grows less and less as the delay is more and more protracted, until cancer is incurable from the extent of the local or general involvement. Cancer of the stomach is a more difficult proposition, but even in such cases there is usually a warning. Abnormal sensations of daily recurrence should not be neglected. So-called indigestion, or what is styled 'colic,' may be the warning. The chances are that it is not, but it may be so. If the pain, the sensations, the message from this part of the body comes time and time again, especially among people over thirty or forty years of age, a physician should surely be consulted."

"The mortality from cancer," concluded the speaker, "could be reduced considerably if the average person knew how to take care of himself. It is not a 'blood disease'—it is not a disease which people have any reason to be ashamed of. So far as physicians can tell, it is not brought on by ill health or food. It comes to healthy persons—the healthy man or the healthy woman—but if the simple, easily noticed warnings be heeded the task becomes comparatively easy, and the only miracle we have to perform is to educate a million people where we now educate one."

A historical survey of the crusade against cancer through the education of the public was given by Curtis E. Lakeman, Executive Secretary of the American Society for the Control of Cancer. He said that the first widely-known campaign of this kind was initiated by Professor Winter, of Koenigsberg, Prussia, in 1891. As a result, the cancer death rate of that vicinity had been definitely lowered, and a large increase in the number of women applying for treatment in the early and operable stages of the disease had been noticed.

In England the chief effort has been made at Portsmouth under the auspices of the health department and at the instigation of Dr. Charles P. Childe, a prominent surgeon, whose book, "The Control of a Scourge," published in 1906, is regarded as one of the best popular treatises on the means of recognizing and preventing cancer. The speaker reviewed the work of pioneer physicians in urging similar educational campaigns in the United States, and referred to the appointment of cancer committees by the American Medical Association, the Clinical Congress of Surgeons, the Pennsylvania State Medical Society, and the action of various state and local boards of health. These local and independent movements have now been co-ordinated in the work of the American Society for the Control of Cancer, which was founded in 1913, with the approval of all the leading professional organizations and with the active interest and support of many prominent physicians and lay people. "The results of the educational campaign," said Mr. Lakeman, "are already becoming clear in such statistics as those reported by the Johns Hopkins University Hospital, the Barnard Free Skin and Cancer Hospital of St. Louis, and similar institutions and clinics showing a very definite and universal increase in the number of patients applying for early treatment. At the Barnard Hospital, for instance, a recent study of the records gives a striking picture of progress in the treatment of one form of cancer among women. From 1905 to 1907 there were 19 cases, with an operability of 11.1%. From 1908 to 1910, inclusive, there were 40 cases, with an operability of 17.5%. From 1911 to 1913, inclusive, there were 40 cases, with an operability of 17.5%. From January, 1914, to December 1st, 1916, there were 66 cases, with an operability of 40.9%.

Dr. Leo Loeb, of Washington University, one of the first workers to devote himself to cancer research in this country, and Prof. G. N. Calkins, of Columbia University, presented papers of great scientific interest on "Tissue Growth and Tumor Growth," and on "The Stimulating Effects of Protoplasmic Substances on Cell Division."


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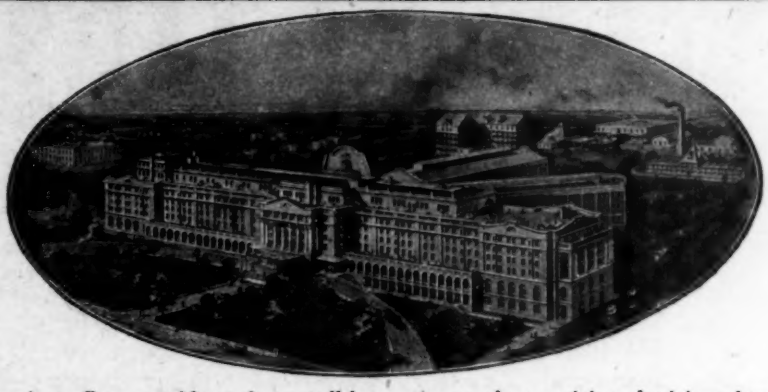
The chief complications of ano-rectal wounds, are, abscess, recto-aginal, recto-vesical or recto-urethral fistula, fecal incontinence, stricture, hernia, fecal fistula, urinary or fecal extravasation, sloughing of the mesentery, peritonitis, phlebitis, pneumonia and necrosis of the sacrum, coccyx or pelvic bones. —GANT.



The diabetic patient offers a problem of no small importance to the practicing physician of today.

Few afflicted with the disease are able or willing to follow out the prescribed regimen—which is so essential to recovery—in the home environment. The patient has no means of determining food values—is seldom prepared even to measure quantities in drams or ounces and has no idea at all about calories of food composition.

Under the favorable conditions afforded by institutional management and the applications of the up-to-date methods, even grave cases may be brought under control and often with surprising promptness. Ordinary cases are quickly made sugar free and cases are very rare which may not be substantially benefited by the efficient application of systematic treatment under conditions of perfect control.

A special advantage of institutional treatment in these cases is the opportunity for educating and training the patient in dietetics and in eating habits adapted to his individual requirements, so that when he returns home at the end of a few weeks he is able to establish and maintain a suitable regimen by which he may, with the aid of careful watching by his family physician, remain sugar free for an indefinite period.

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## Agmel.

This pharmaceutical product is the concentrated fresh sap of the Mexican pulque maguey (of the family of the Agaves) or century plant. The genus contains in the neighborhood of one hundred and sixty varieties of which about one hundred and thirty are indigenous to Mexico, which indicates that country as the original home of the genus. The botanical name given to the particular species under discussion is Agave atrovirens Karw.

The commercial and therapeutic values of this plant and its sap have been well known and recognized by Mexican physicians and other scientific writers for centuries, as is attested by the extensive bibliography covering the subject and dating back to the year 1592.

The unique therapeutic value of the sap consists in its almost specific action in all affections of the kidneys and urinary tract. Its merit in this direction was first called to the attention of scientists through the almost complete absence of serious kidney affectious amongst the residents of the pulque zone where very large quantities of the beverage are consumed daily.

As investigation progressed, it became evident that, even though deteriorated through fermentation, the maguey sap, in becoming pulque, retained its virtue in a sufficient degree to produce the prophylactic results above stated. Further investigation demonstrated that not only is it a preventive of disease but, when administered in its fresh, unaltered condition, it is of practically specific effect in the treatment of these diseases.

Such an eminent medical authority as Sir John Bland-Sutton, F. R. C. S., in an article in *The Lancet* of January 6, 1912, says: "Aguamiel has been used as a remedy for inflammatory conditions of the urinary organs by Mexican physicians for centuries. To-day American physicians send patients with Bright's disease to take the aguamiel cure in Mexico. The aguamiel obtained from the maguey of the plains of Apam has the greatest reputation."

*La Escuela de Medicina*, the leading medical journal of Mexico, says editorially: "The sap of the maguey plant, commonly called aguamiel, is one of the most ancient remedies known to the Western Hemisphere and the spread of its fame and the augmentation of its use through the centuries and from race to race is due to the fact that it is the only substance known up to the present time, in the whole world, having the power to radically and permanently overcome Bright's disease."

Charles S. Dolley, M. D., (University of Pennsylvania) in the *Therapeutic Gazette* of March, 1911, says: "Numerous contributions have been made to medical literature on the curative value of the fresh and fermented sap of the maguey. It is most generally recognized and widely used in diseases of malnutrition and especially where this has led to diseases of the kidneys and bladder. In congested and inflamed states of these organs, in renal inadequacy due to an atonic condition of the epithelial cells of the kidney, in the early stages of the various affections of the kidney associated with albumin in the urine, and collectively referred to as Bright's disease, it has been found to be an almost unfailing remedy. The use of aguamiel in these cases is becoming widely known to American physicians and they send their patients to Mexico in increasing numbers each year to take the aguamiel cure, with the most gratifying results."

Numerous efforts have been made to reduce aguamiel to a pharmaceutical preparation but until recently all efforts to accomplish this were unavailing. Fortunately, within the past few years, a method has been discovered whereby fresh aguamiel may be concentrated without alteration of any kind except in respect to density and the finest Apam aguamiel is now being prepared for medicinal use by the very latest methods of pharmaceutical science.

The Agmel Company of America, Inc., at 220 Broadway, New York, are the sales agents for the United States.

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## Calcium Lactate for Tubercular Bronchial Glands.

A. Warsen (*Upsala Läk. Fork.*) describes his comparative study, with the help of the *x*-rays, of two batches of 20 children treated, respectively, for two months without any lime, and with 6 to 12 gm. of the lactate daily. These large doses produced no harm, but excellent clinical effects, not apparently bettered when sodium tartrate was given to some in addition. In two cases with protracted pyrexia, the fever yielded almost immediately to the calcium in the absence of any other change in treatment. The *X*-ray results were most instructive; in batch 1, even after seven months, only one definite calcium deposit, and only two intensized glandular outlines; in batch 2 (after two months), at least 12 shadow intensifications, and 8, perhaps 14, calcium impregnations. These facts tell their own tale.—(*Prog. Med.*, Sept., 1916.)